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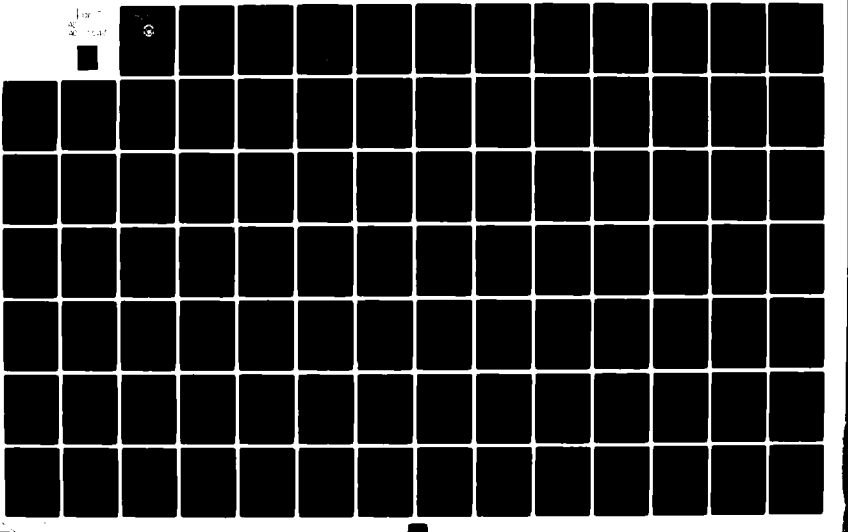

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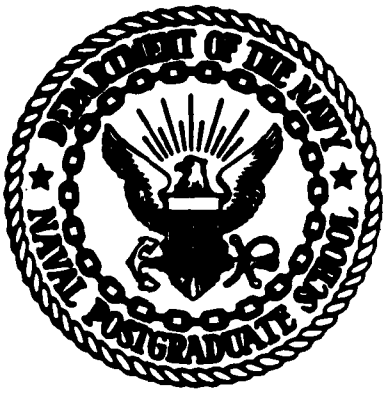

Master's **THESIS**

ACQUISITION STRATEGIES FOR PURCHASING BULK PETROLEUM IN DOD

by

James Edward Wright

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Thesis Advisor: D.C.Boger

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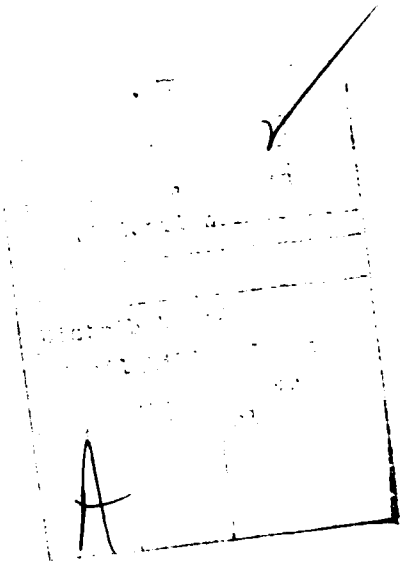

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Acquisition Strategies For Purchasing Bulk Petroleum In DOD

by

James Edward Wright
Captain, United States Army
A.B., Indiana University, 1970

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

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ABSTRACT

The Defense Fuel Supply Center (DFSC) has, in the recent past, been unable to obtain sufficient offers to satisfy all of its bulk fuel requirements. Many issues have contributed to this procurement problem. Defense contracting is a synthesis of laws, regulations and administrative procedures, for instance. Other contributors are socio-economic clauses, submission of cost or pricing data, lower profit margins on JP-4, and more.

The author examines the issues and possible alternatives in conjunction with the structure, conduct and performance of the petroleum industry. DFSC has already initiated several changes to improve the contracting process. Still, DFSC faces a seller's market with no available substitutes for fuel. Inadequate planning and management of the Naval Petroleum Reserve and the Strategic Petroleum Reserve have compounded this disadvantage. Despite these limitations, DFSC has some good options available to it.

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I. INTRODUCTION

Assured petroleum fuels and products are a commodity that the Department of Defense (DOD) cannot do without. Aircrafts, ships, tanks, and trucks become useless without adequate supplies of petroleum fuels where they are needed. Recent events such as the OPEC I and OPEC II embargoes have highlighted the vulnerability of these critical supplies.

The Defense Fuel Supply Center (DFSC), the fuel procurement agency of DOD, has in the recent past, been unable to obtain sufficient offers to satisfy all of its requirements. Impacts of the procurement shortfalls have been significant. An example is reductions of DOD inventories of mobility fuels below required levels. [72:1]

There are many issues which affect this procurement situation. Some result from legislation and others stem from the way in which DFSC conducts its business. Industry practices generate further conflicts. But these should not prevent DOD from obtaining bulk fuels.

A. GENERAL

The major focus of this thesis is to identify the existing problems of the bulk petroleum acquisition process. Possible alternatives to deal with these problems are then developed. The goal is to evaluate alternatives to arrive at functional solutions which might enhance the procurement process.

In order to achieve this end, several aspects of the process will be reviewed. This includes a discussion of the contracting environment. Additionally, it is necessary to determine what the petroleum industry represents as the seller.

B. RESEARCH QUESTIONS

1. What is the regulatory and administrative environment of the bulk petroleum procurement process?

2. What is meant by the term, "the petroleum industry?"

3. What are the present procurement procedures for acquisition of bulk petroleum?

4. What are the relevant issues behind the procurement problem?

5. What alternatives offer a viable solution to improve bulk petroleum procurement?

C. SCOPE, LIMITATIONS, AND ASSUMPTIONS

1. Scope

This research will only deal with the procurement of bulk petroleum fuels by DOD. The distinguishing characteristic of bulk fuel is that it is purchased by DFSC and is funded through the Defense Stock Fund. [62:II-1-1] Primary emphasis is on the acquisition of JP-4 since it represents the majority of DOD's requirements.

Other types of fuel procurements will not be addressed. This includes purchases of packaged fuels.

These are fuels which are packaged and supplied in containers of five to 55 gallon capacity. Also included are fuels in military collapsible containers of 500 gallon capacity or less. [62:I-1-22] Also, certain types of bulk fuel procurement will not be examined. They encompass the following: [62:II-1-1]

a. Post, Camp, and Station Bulletin contracts.

b. Bunker contracts.

c. Emergency purchases for vehicles, vessels, or aircrafts.

d. Credit card purchases for service station delivery.

e. Items excluded from DLA-integrated materiel management due to limited size of procurement or other peculiarities, as listed in appendix 2-1A of DOD 4140.25-M.

2. Limitations

The research is intended to accurately and fairly represent the views of the petroleum industry and the Government. Due to the limitation of funds and time, this research is not as extensive as the author desired. Petroleum firms and Government officials were very cooperative. In order to preserve the confidentiality of sensitive opinions and information, some aspects are addressed in general terms. If comments are representative of most firms interviewed, the material will be presented as an industry opinion. Singular statements are identified as a spokesman or similar noun.

3. Assumptions

In the interests of space and time, it is assumed that the reader of this thesis has a basic knowledge of petroleum and procurement. However, it is presented in a manner so that a knowledge of petroleum or procurement, but not both is sufficient to understand most of the information.

D. METHODOLOGY

The research was conducted in three phases. An initial literature search was conducted to gain a basic understanding of the process. This was followed with a series of interviews, both personal and telephonic. Finally, a more detailed literature review was pursued to develop the issues.

1. Initial Literature Search

Numerous agencies and sources of information were able to yield useful information on the petroleum industry and procurement of bulk petroleum. Primary sources of literature were the Defense Logistics Study Information Exchange (DLSIE), the computer search program of the Dudley Knox Library, and the Defense Fuel Supply Center. Many secondary sources also proved useful. These included the American Petroleum Institute (API), the American Enterprise Institute (AEI) and the General Accounting Office (GAO).

Certain references were particularly useful in providing information. The report of the Investigations Subcommittee of the House Armed Services Committee on Department of Defense Petroleum Requirements and Supplies was the key document. Other documents concerning procurement issues and historical developments were relevant GAO reports. Current procedures and facts were well explained in the DOD Manual for the Management of Petroleum Products, the Department of the Navy Energy Fact Book, and the Meininger article, "Procurement of Petroleum Products for the Navy."

The analysis of the petroleum industry was developed from three principal sources. American Industry: Structure, Conduct, Performance by Caves and class lectures from Professor Dan Boger of the Naval Postgraduate School on "Structure, Conduct and Performance of Defense Industries" were especially enlightening. Further information was gained from Vertical Integration in the Oil Industry by Mitchell.

2. Interviews

There were two approaches used in interviews. Telephonic interviews were used for initial contact with oil company officials and for agency spokesmen located away from the California area. Personal interviews were conducted with representatives from DLA, the Defense Fuel Region-West, Atlantic Richfield and Union 76. Other

agencies which participated by telephone were the Defense Personnel Support Agency, DFSC HQ, the Petroleum and Field Services Directorate of Fort Lee, Virginia, Powerine Oil and Champlin Oil Company.

3. Detailed Search

Periodicals gave an up to date and detailed source of information. The ones most frequently used were the Wall Street Journal, Business Week and the Harvard Business Review. There were a distinct lack of theses concerning petroleum operations and in particular, petroleum acquisition.

E. DEFINITIONS

Barrel - Standard unit of measurement of petroleum liquids consisting of 42 U.S. standard gallons at 60 degrees Fahrenheit. [62:I-1-20]

Bulk Petroleum Products - Liquid petroleum products that are normally transported by pipeline, rail tank car, road tank truck, road tank trailer, barge, harbor, or coastal tanker and ocean going tanker and stored in a tank or container having a fill capacity greater than 55 U.S. gallons. [62:I-1-20]

Feedstock - Crude oil or fraction thereof to be charged to any process equipment in a refinery. [31:2]

Market Price - A price established in the usual and ordinary course of trade between the sellers who own the item and buyers who are free to bargain. [31:2]

Reference Price - It is a base price from which the listed item is to fluctuate. It is composed of the monthly weighted average acquisition cost of crude oil per barrel. [Contract clause E19.03]

F. ORGANIZATION OF THE STUDY

Procurement of bulk petroleum is a diverse and timely topic. After a treatment of the required regulations and manual for use in petroleum acquisition in Chapter II, the author presents key legislative acts which influence the process. Chapter III consists of a look at the structure, conduct and performance of the petroleum industry. This is followed by a discussion of special characteristics of fuel as a commodity. Present contracting procedures are reviewed in Chapter IV. It begins with a historical perspective leading up to the present. Current procedures consist of requirements submission, the contracting cycle and contract administration. Procurement shortfalls have generated much discussion on the present methods used. That leads to the purpose of Chapter V, to examine the issues surrounding the procurement process. Chapter VI then pursues possible alternatives to deal with these issues. Finally, conclusions and recommendations are outlined in Chapter VII.

II. PETROLEUM POLICY AND REGULATORY STRUCTURE

The procurement of bulk petroleum does not occur in a vacuum. To better understand the procurement of bulk petroleum, it is necessary to examine the environment within which it occurs. The regulations, laws and procedures affecting this process will be explored. This list is not meant to be all inclusive. Rather, it will treat the ones involved in controversies concerning acquisition methods by the Department of Defense (DOD).

This chapter presents the content and apparent intent of this list of measures. It will serve primarily as a reference for future chapters which will examine, in detail, the controversies surrounding each of these measures.

A. DEFENSE ACQUISITION REGULATION (DAR)

After World War II, the Government faced the problem of returning to peacetime operations and peacetime procurement. To prosecute the war effectively, the rules for Government purchasing had been temporarily liberalized. After protracted study to determine the best course of action, Congress passed the Armed Services Procurement Act in 1947.

The Armed Services Procurement Act accomplished workable procurement policies for periods of national emergency. Either the President or the Congress can put these policies into immediate effect when either thinks the nation is

threatened. Second, the law recognized that negotiated procurement is a required method of purchase in peacetime as well as in wartime. [4:554]

The Act was implemented within DOD by the Defense Acquisition Regulation (DAR-formerly known as the Armed Services Procurement Regulation-ASPR). The Regulation was issued by the Assistant Secretary of Defense (Installations and Logistics)--now known as the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics) (ASD(MRA&L))--and in coordination with the Secretaries of the Army, Navy, and Air Force and the Director of the Defense Logistics Agency. The purpose of the DAR is to establish uniform policies and procedures relating to the procurement of supplies and services under the authority of Chapter 137, Title 10 of the United States Code or under any other statutory authority. [DAR: 1-101]

The DAR applies to all purchases and contracts made by DOD, within or outside the United States, for the procurement of supplies or services which obligate appropriated funds. One of two exceptions to the DAR is transportation services procured by transportation requests, transportation warrants, bills of lading, and similar transportation forms. Procurement of these excepted transportation services is regulated by the Military Traffic Management and Terminal Service (MTMTS), the Military Sealift Command (MSC), the Military Airlift Command (MAC), and the service departments.

[DAR: 1-102] The other excepted item is automatic data processing equipment (ADPE). Procurement of ADPE is controlled by the General Services Administration.

The DAR was not intended to be an inflexible set of rules. It is the umbrella encompassing all DOD procurement and leaves room for astute judgment. Innovations to attain desirable objectives occasionally necessitate deviations from the DAR. When this occurs, the government contracting officers request the deviations having been determined to be in the best interest of the Government. [DAR: 1-109.1]

Deviations from the DAR are of two types. The first is a deviation affecting only one contract or transaction. This procurement may be made or authorized in accordance with Departmental procedures provided (i) such circumstances justify a deviation and (ii) written notice of such deviation is furnished through channels. [DAR: 1-109.2] The second type of deviation is one affecting more than one contract or contractor. This must be approved in advance by the ASD (MRA&L). Also, unanimous approval by the members of the DAR Committee will suffice except for matters involving major policy. [DAR: 1-109.3] Deviations of the latter type are examined closely since the intent of the DAR may not be served.

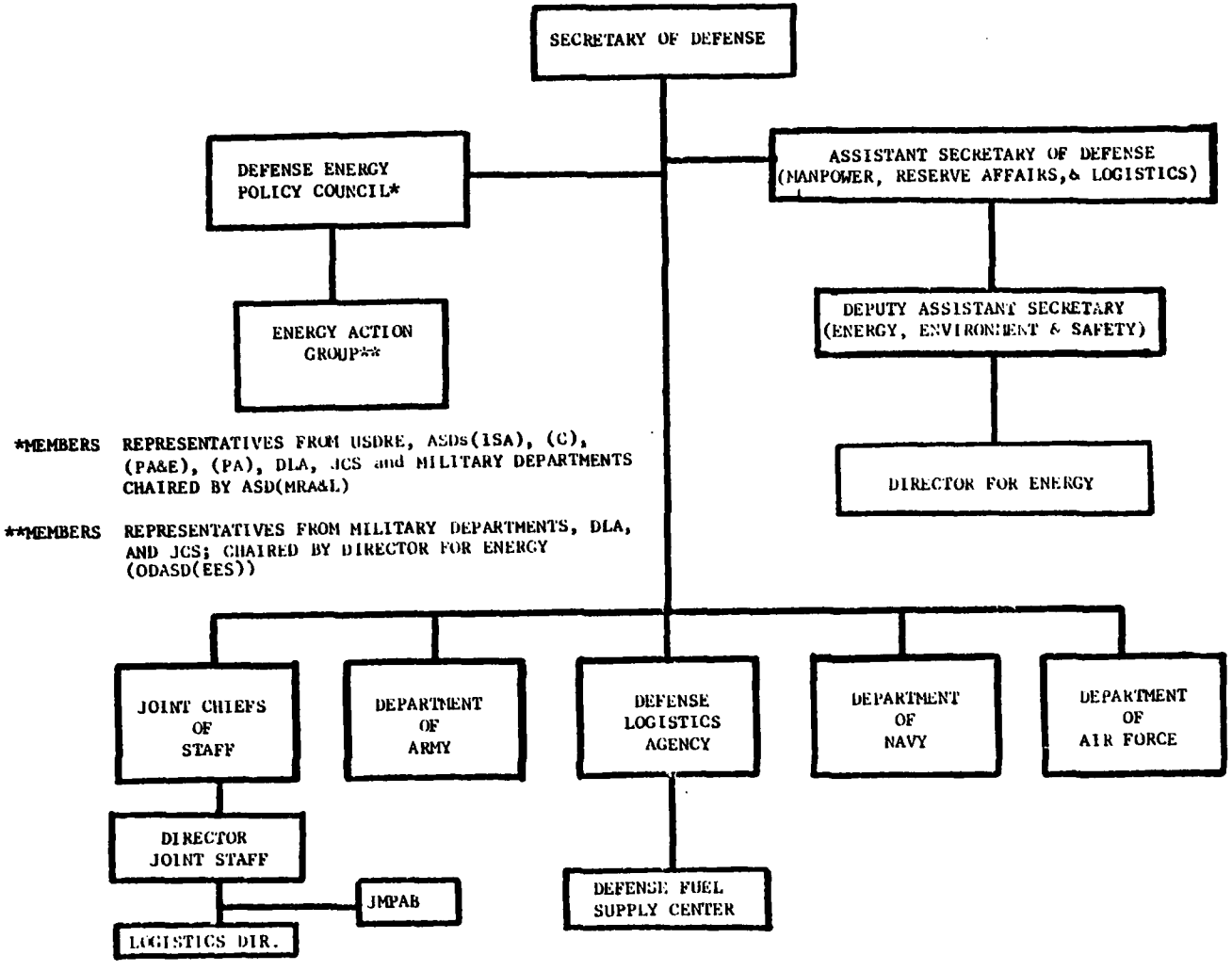
B. DOD MANUAL FOR MANAGEMENT OF PETROLEUM PRODUCTS

The second document which affects the procurement of bulk petroleum is DOD 4140.25-M, "Procedures for the Management of Petroleum Products." This manual is issued under the authority of DOD Directive 4140.25, "Management of Petroleum Products," and DOD Directive 4000.25, "Administration of Military Standard Logistics Systems." The manual prescribes procedures which govern the management of bulk petroleum products and is mandatory for use by all DOD activities.

The ASD (MRA&L) is responsible for establishing policies and providing guidance relating to DOD petroleum logistics programs, systems, and procedures. The office is also charged with assuring their effective implementation. These functions are primarily discharged through the Director for Energy, Office of the Deputy Assistant Secretary of Defense (Energy, Environment, and Safety). The DOD energy organizational alignment is shown in Figure 2-1.

The Director for Energy has been established as the primary DOD focal point for energy matters. His responsibilities include the development of Petroleum Logistics Policy; serving as the DOD principal point of contact on all matters of energy policy and implementation of DOD energy policy; monitoring current energy procurement and supply problems; reviewing DOD requests for priority fuel supply allocations; and serving as the secretariat for the Defense Energy Policy Council and the Defense Energy Action Group.

DOD ORGANIZATION FOR ENERGY MANAGEMENT



Source: DOD 4140.25-M

Figure 2-1

The Defense Logistics Agency (DLA) is the Integrated Material Manager (IMM) for petroleum products. This includes ownership and accountability of bulk petroleum pre-positioned war reserve materiel and peacetime operating stocks at all levels of distribution down to the base commander.

The Defense Fuel Supply Center (DFSC) is a primary level field activity of DLA and has been made the petroleum IMM. DFSC is assigned coordinated procurement responsibility for all petroleum products and coal with its related services. This worldwide responsibility as IMM for wholesale bulk petroleum products extends until their delivery to the point of sale. See Figure 2-2 for the DFSC Organization Chart. [62:I-1-1]

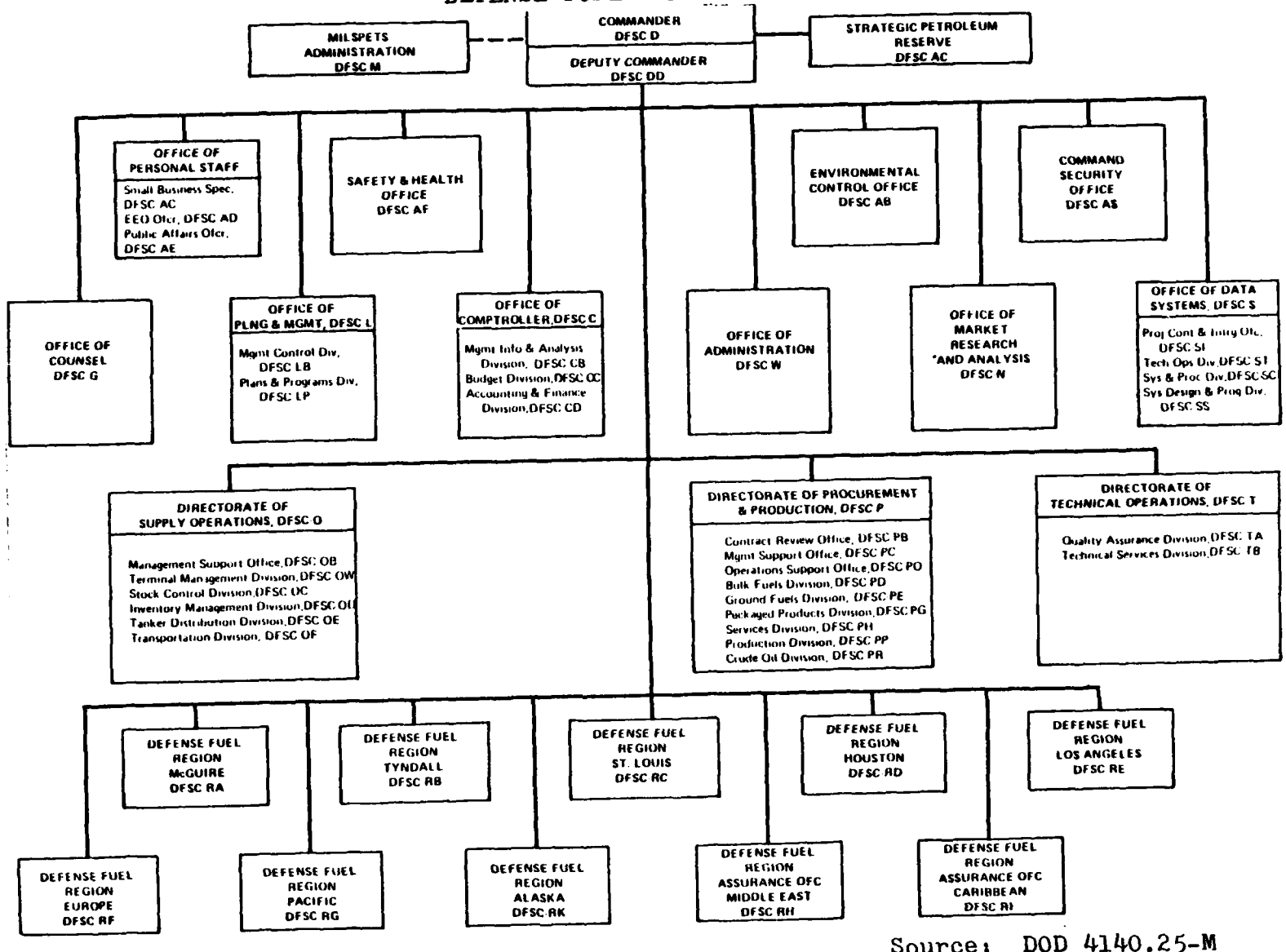
C. DEFENSE PRODUCTION ACT OF 1950

The declaration of policy describes the intent of the Act: [Section 2062]

> In view of the present international situation and in order to provide for the national defense and national security, our mobilization effort continues to require some diversion of certain materials and facilities from civilian use to military and related purposes. It also requires the development of preparedness programs and the expansion of productive capacity and supply beyond the levels needed to meet the civilian demand, in order to reduce the time required for full mobilization in the event of an attack on the United States.

The crucial part of the Act with respect to this thesis is Title I on priorities and allocation. It states the following on domestic energy supplies: [Section 2071]

DEFENSE FUEL SUPPLY CENTER



Source: DOD 4140.25-M

Figure 2-2

> Notwithstanding any other provision of this Act (sections 2061 to 2169 of this Appendix), the President may, by rule or order, require the allocation of, or the priority performance under contracts or orders (other than contracts of employment) relating to, supplies of materials and equipment in order to maximize domestic energy supplies if he makes the findings required by the next paragraph of this subsection.
>
> The authority granted in this subsection may not be used to require priority performance of contracts or orders, or to control the distribution of any supplies of materials and equipment in the marketplace, unless the President finds that-
>
> (A) such supplies are scarce, critical, and essential to maintain or further (i) exploration, production, refining, transportation or (ii) the conservation of energy supplies, or (iii) for the construction and maintenance of energy facilities; and
>
> (B) maintenance or furtherance of exploration, production, refining, transportation, or conservation of energy supplies or the construction and maintenance of energy facilities cannot reasonably be accomplished without exercising the authority specified in the above paragraph of this subsection.

The essence of the Act is that it can be invoked to require oil companies to supply petroleum products for the Government's needs. This insures the Government can obtain the product, but the price is still negotiable.

D. EMERGENCY PETROLEUM ALLOCATION ACT OF 1973

In January 1974, the situation for the DFSC contracting officer was further complicated when the Emergency Petroleum Allocation Act (EPAA) became effective. The EPAA required the DOD to obtain its domestic petroleum needs by allocations placed on refiners by the Federal Energy Administration (FEA). Now the Federal Energy Regulatory Commission (FERC), part of the Department of Energy (DOE) administers the Act. [73:11]

Although Government policy had affected the price and availability of crude oil for sometime, direct federal regulation of crude oil prices was introduced by the EPAA. [71:xi] Under price controls and the allocation system, competitive procurement was eliminated, and the normal schedule for competitive bid solicitation, evaluation and contract award was not employed. Oil companies were told that they would supply fuel to the DOD, generally on the basis of December 1973 supplier-purchaser relationships. Even though EPAA mandated negotiated procurement, competitive bidding for oil products procured by DFSC had been eliminated since of 1973. [73:11]

E. ENERGY POLICY AND CONSERVATION ACT OF 1975

The Energy Policy and Conservation Act (EPCA) gave the President discretionary authority to decontrol prices of crude oil. It also modified the EPAA and essentially formed the present regulatory system which divides all domestic crude oil into the following three classifications, or tiers: [71:xi]

- Old oil, or lower-tier oil, which is oil from properties that began producing before 1973.
- New oil, or upper-tier oil, which is oil from properties that began producing during or after 1973.
- Uncontrolled oil, which is oil that earns as much as refiners are willing to pay for it. Three types

of oil are allowed this treatment: Alaskan North Slope oil, Naval Petroleum Reserve, and "stripper" oil--that is, oil from wells that produce ten or fewer barrels per day.

F. TRUTH IN NEGOTIATIONS ACT

Specific allegations of overpricing made against the Air Force and Navy in the 1950's led, in 1962, to the passage of Public Law 87-653, Truth in Negotiations Act. The Act states that the contracting officer must require the contractor to submit cost or pricing data and to certify that they are complete, accurate, and current at the time agreement is reached on price. These requirements apply to all negotiated contracts, contract modifications and price adjustments expected to exceed $100,000. This also applies to subcontractors when their portion of the contract is $100,000 and 10% of the total contract or over $1 million. Submission may be either actual or by specific identification in writing. [50:3B-4]

It is helpful to define cost or pricing data at this point. It is data consisting of all facts existing up to the time of agreement on price, which prudent buyers and sellers would reasonably expect to have a significant effect on price negotiations. Being factual, these data are types of information that can be verified. They do not reflect on the accuracy of the contractor's judgment about estimated future costs or projections; they do, however, reflect on the data upon which the contractor based his judgment. [50:1A-B6]

As is the case with most laws and regulations, there are exemptions to P.L. 87-653. A contractor or a subcontractor may be exempt if the following conditions exist: [50:3B-4]

- there is adequate price competition, or
- catalog or market prices exist, or
- prices set by law or regulation, or
- the head of the procuring agency waives the requirement.

This type situation must be documented using DD Form 633-7, Claim for Exemption from Submission of Certified Cost or Pricing Data.

The significance of the submission of cost or pricing data is that the contractor is liable should there be defective data. If it is subsequently found that the data was inaccurate, incomplete, or noncurrent as of the effective date of the certificate, then the Government is entitled to an adjustment of the negotiated price, including profit or fee. The Government can exclude any significant sum by which the price was increased because of the defective data if three things can be proved by the contracting officer. The contracting officer must show that (a) the defective data caused a significant variance in the price, (b) that he relied on the data, and (c) that the false data resulted in damage and the value of the damage. [50:1A-B7] The contracting officer can offset such overstatements by the contractor against understatements within the same contract.

The remainder of an overstatement above the offset will be recovered by the Government. If false data was submitted by the contractor intentionally, it could result in a fine and possible imprisonment.

G. COST ACCOUNTING STANDARDS

For further disclosure and uniformity in procurement, Congress, in 1970, created the Cost Accounting Standards Board by P.L. 91-379. The Board has promulgated uniform Cost Accounting Standards (CAS) for those contracting with the Government for its defense needs. The Standards had to be followed in negotiated contracts, with exemptions paralleling those in the Truth in Negotiations Act. Contractors were also required to disclose their cost accounting methods as a condition for contracting and had to agree to price adjustments for failure to comply with cost standards. [See 50 App. U.S.C. 2168] In general, CAS apply to the same contracts as does P.L. 87-653. [50:3B7]

H. SUMMARY

The procurement of bulk petroleum by DOD is strongly influenced by laws, regulations and administrative directives. This environment is highlighted by several key measures. The DAR establishes uniform policies and procedures relating to the procurement of supplies and services within the DOD. The two exceptions to the DAR are transportation services

and ADPE. There also exist deviations to the DAR. A deviation may be for one contract only or it can be a multiple contract deviation.

Another key influence is the DOD Manual for Management of Petroleum Products. It prescribes the procedures which govern the management of bulk petroleum products. Its use is mandatory for all DOD activities.

Legislative acts are the major sculptor of the bulk petroleum acquisition process. Five of these are reviewed. First, the Defense Production Act of 1950 allows the President to require the oil companies to supply petroleum products for the Government's needs. This can only be done when it is determined to be vital for the Nation. Next is the Emergency Petroleum Allocation Act (EPAA) of 1973. EPAA introduced direct federal regulation of crude oil prices and eliminated the use of formal advertising in bulk petroleum procurement As its name implies, it required DOD and commercial customers to receive domestic petroleum supplies by allocation during periods of shortage. Third, is the Energy Policy and Conservation Act (EPCA) of 1975. This gave the President discretionary authority to decontrol crude oil. Furthermore, it classifies oil as old oil, new oil, or uncontrolled oil for purposes of price control. The Truth in Negotiations Act requires contractors to submit cost or pricing data on contracts in excess of $100,000. Oil companies request exemption under the claim of market prices of commercial items sold in quantity to the general public. Finally, Cost Accounting

Standards (CAS) requires further disclosure and uniformity in procurement. Contractors can be exempted from CAS under the same conditions of market price.

III. THE STRUCTURE, CONDUCT, AND PERFORMANCE OF THE PETROLEUM INDUSTRY

The purpose of this chapter is to describe what is meant by the term "the petroleum industry." The framework to be used for describing this industry turns on three simple concepts--market structure, market conduct, and market performance. This framework and its causal relationships will help the reader to understand the bulk petroleum environment. Also, the uniqueness of petroleum fuels in general and JP-4 in particular is examined. The procurement of bulk petroleum will be examined in a later chapter.

A. PETROLEUM INDUSTRY MARKET STRUCTURE

Market structure consists of the relatively stable features of the market environment that influence the rivalry among the buyers and sellers operating within it. Market structure includes many elements such as the number of buyers and sellers, product differentiation, barriers to entry, cost structures, and vertical integration. Thus, more than a simple description is required to define the petroleum industry.

Market structure interacts and is influenced by the basic conditions of supply and demand. Market structure (the environment) in turn influences market conduct (the behavior of economic agents within the environment). [1:14] In

order to begin the description of market structure, the petroleum industry boundaries must first be addressed.

1. The U.S. Petroleum Industry

Unlike petroleum operations in many foreign countries, where the state owns or participates in mineral industries, the U.S. petroleum industry is free of Government ownership. It consists of corporations, large and small business entities, and individuals.

The petroleum industry is the third largest business in the country in terms of total assets. It is exceeded only by agriculture and the combined public utilities (electric, gas, and communications). In manufacturing, however, petroleum ranks first by a wide margin. [65:132]

a. Four Basic Industrial Activities

At least four basic industrial activities comprise what is broadly termed "the petroleum industry." [65:160]

(1) Production. The first of these activities, production, involves the search for, development, and extraction of commercial reservoirs of crude oil and natural gas. At this stage, crude oil and natural gas production cannot be reasonably separated. The largest crude oil producers also tend to be the largest natural gas producers.

(2) Refining. The refining industry acquires crude oil from the producing industry. Through complex distillation and catalytic processes, the crude oil is converted into a wide range of useful products. From the "top

of the barrel" comes propane, butane, gasoline, and petrochemical feedstocks. The "middle distillates" are products such as home heating oil and diesel fuel. Other refined products are residual fuel oil and asphalt.

(3) Marketing. The marketing industry embraces the vast network of wholesalers (jobbers), fuel oil dealers, and retail service station operators who move finished petroleum products to the ultimate consumer.

(4) Transportation. While a variety of transportation modes (pipelines, water, rail, and trucks) are available to move crude oil and petroleum products, the extraordinary efficiency of pipelines makes them the preferred mode for overland transportation. In 1974, not counting gathering lines, domestic crude oil and products movement was about 47 percent by pipeline, 29 percent by tank truck, 22 percent by water and about two percent by rail. [27:18] Trucking is more important in the distribution of petroleum products, particularly in the relatively small individual lots, moved from terminals and bulk plants to retail outlets. For moving products in large quantities any distance from the refineries, pipelines or water transportation, if available, are used.

b. Independent Companies

Each of the four subindustries contains companies which are engaged primarily or exclusively in that activity. There are, for example, thousands of U.S. oil and gas producing companies, ranging from stripper well operators to

large exploration and production companies. Similarly, each of the other subindustries has independent, nonaffiliated companies. [65:160]

c. Integrated Companies

Another group of companies are integrated, in the sense that they are generally engaged in two or more of the four basic petroleum activities. While there are smaller integrated firms, in the context of divestiture legislation, attention is generally focused on the integrated "majors." There is some disagreement on which firms might or might not be classified as majors.

(1) Integrated Majors. Examples of these "integrated majors" in descending order by 1978 refined product sales are: Exxon, Texaco, Standard of California, Standard of Indiana, Shell, Mobil, Gulf, Atlantic Richfield, Amerada Hess, Sun, Marathon, Ashland, Phillips, and Union. [32:129]

(2) The Big Seven. Five of these U.S. petroleum companies are also international majors. This select group of international companies are called "The Seven Sisters." In addition to Exxon, Texaco, Mobil, Standard of California, and Gulf, Royal Dutch Shell and British Petroleum must be added.

The five U.S. members of the Big Seven have a major impact upon the domestic market. They accounted for over 30 percent of the domestic 1978 refined product

sales. [32:129] But more importantly, a contracting officer estimated that DFSC currently buys approximately 50 percent of its needs through these international majors. The reason is the size of the DFSC requirement. [84]

2. Elements of Market Structure

With these industry boundaries in mind, it is now useful to look at the elements of market structure. Broad classifications such as oligopoly are insufficient. This is because there can be considerable variation in structure within this broad classification.

a. Oligopoly

DFSC essentially faces an oligopoly in the refining industry. This means there are few sellers of petroleum products and that the market activities of one seller have an important effect on the other sellers. Petroleum products tend to be homogeneous in the eyes of the customer. The JP-4 from one company is equivalent to the JP-4 of other companies. [91] Yet the services of the petroleum pipeline industry approximates a differentiated oligopoly. [2:274] The point being that no single definition of the petroleum industry tells the whole story.

b. Concentration Ratios

Concentration ratios are a measurement tool which take into account both the number and the size distribution of firms in a market. These ratios are domestic only.

Concentration ratios for the petroleum industry are modest and do not suggest the existence of monopoly power in the market. Since 1970, oil production concentration at the four-firm level has fallen by 2.6 percentage points--from 26.3 percent in 1970 to 23.7 percent in 1978. Concentration of U.S. oil reserve holdings has remained fairly steady during the last few years, being 36 percent for the top four in 1978. The difference between reserve concentration and production concentration is due to the fact that just three companies--Sohio, Exxon, and Atlantic Richfield--own most of the large Alaska Prudhoe Bay reserves. Concentration in refinery capacity peaked in 1970 for the top four and is now down to 30.9 in 1978. Concentration in the marketing of all refined products has fallen substantially since the late 1960's--from 36.9 in the top four down to 28.6 in 1978. Finally, concentration in interstate pipeline transportation has been fairly stable in the past few years--being 32.4 in 1975 and 30.6 in 1978 for the top four. [32:1-13] This general decline in concentration ratios during the 1970's suggests that competition is increasing in the petroleum industry.

c. Barriers to Entry

Just as concentration reflects the number of actual market rivals of a firm, so the condition of entry tells the story about potential rivals. Entry into refining has been the greatest concern to the Federal Trade Commission (FTC). The following is from an FTC report:

[64:25]

> In addition to being a highly integrated industry, the petroleum industry, and refining in particular, is also characterized by high barriers to entry. . . The most obvious barrier is the high capital cost of entering the refining industry.

Economist David Teece of Standord has suggested that entry into the various stages has been relatively easy. To the extent that it has been difficult, the problem has been the result of Government policy or environmental restrictions. [9:164]

Barriers due to economies of scale can also arise because firms do not achieve the lowest possible operating costs until they have grown to occupy a large portion of the national market. In a study by Scherer [6:94,336] it was estimated that an efficient firm in the petroleum products industry had four to six percent of U.S. sales. Also, an efficient firm had two or more plants. In 1978, only the top eight firms in terms of U.S. refined product sales met the above criteria. [32:129]

d. Vertical Integration

A company is said to integrate vertically by merging with one of its suppliers (integrated backward) or with one of its customers (integrated forward). A refiner can integrate vertically by merging into oil production or petroleum marketing for example. Vertical integration is prevalent in the petroleum industry for many reasons.

(1) Control of Resources. There are many inherent advantages in controlling a firm's source of supply. It reduces the risk and uncertainty of supply. Embargoes may not affect the operation, for example. By substituting internal control for market control, the company is no longer dependent upon market prices. Furthermore, bargaining costs are eliminated when the supplier is dedicated to the firm. [30]

(2) Cost Economies. A dedicated supplier reduces the chances of a stockout. It also protects the company against uneconomical order quantities.

(3) Profitability. Multidivisional firms have additional flexibility over competitors. This provides options in the use of limited resources. This further enhances profit maximization. [1:41]

(4) Alternative to Long-Term Supply Contract. Long-term supply contracts are frequently used to combat a noncompetitive market. Vertical integration does somewhat the same thing. It assures a firm of a source of supply or an outlet for its product. [9:132]

(5) Functional Areas. The petroleum industry is characterized by vertical integration through all phases of the business. Most of the larger companies encompass production, refining, marketing, and transportation under the same corporate banner. This maximizes the control of a firm in the industry and minimizes the effects of the

market. [9:151] There is support for and much discussion concerning divestiture of the petroleum industry to increase competition. Conversely, there is much argument against this.

B. PETROLEUM INDUSTRY MARKET CONDUCT

Market conduct consists of a firm's policies toward its product market and toward the moves made by its rivals in that market. Market conduct in the petroleum industry will be divided into three areas: pricing policies, product quality policies, and policies toward rivals. Through a process of action and reaction, an equilibrium is established across the entire market. [1:50] The effect of market conduct is to help determine how well a market performs.

1. Conduct Under Oligopoly

The essence of oligopoly is that there are few enough firms that they recognize the impact of their actions on their rivals and thus on the market as a whole. The key to this inevitable interaction of sellers in an oligopolistic market is that it must be recognized by the participants.

The best performance that oligopolies can achieve is to maximize their joint profit. This requires agreement on the principle to do it, agreement on the details of how to do it, and adherence to the agreement. This bargaining does not take place around a table, but rather through the process of offering deals in the market place and reacting to those offered by competitors. [1:52-53]

Performance will most likely be something less than joint profit maximization. This is because it is very hard for oligopolists to devise a mechanism for enforcing their agreements. The temptation to cheat becomes an important limiting factor. [1:53] Also, price collusion would violate the Sherman Antitrust Act.

2. Pricing Policy

Pricing policy is a function of product differentiation. The less the product is differentiated, the more responsive competitors are to price decreases and the less responsive competitors are to price increases. Typically, an oligopolistic industry is depicted as facing a kinked demand curve in the short run. This means that if a firm raises its price, demand for its product will fall sharply. Thus, the demand curve facing the firm will be very elastic. Conversely, if a firm attempts to lower its price to increase its market share, other firms will do the same. Thus, market shares will remain about the same and the firm faces an inelastic demand curve. If all sellers in the petroleum industry held this view of their rival's responses, then the expected result would be for the industry price to be relatively rigid. [1:55] However, the petroleum industry does not currently operate in an unconstrained environment.

Since August 1971, the Government has maintained four types of controls on domestic petroleum:

- Prices of crude oil.
- Prices of products produced from crude.

- Allocations of crude and products from sellers to buyers.
- Transfer payments, or entitlements, from some refiners to other refiners.

The basic purpose of the controls is to reduce the inflationary effects of the large increases in energy prices, yet maintain equity among various sectors of the petroleum industry. [68:63]

a. Crude Oil Price Controls

Wellhead prices of domestic crude oil are established based on the initial production date of the well, geographic area, oil quality, supply-demand relationships, competitive pricing with other oil, and other related factors. [68:64] Basically, a three tier system of price controls was instituted by the Energy Policy and Conservation Act (EPCA)--see Chapter II. The President decided to decontrol domestic crude oil prices gradually starting on June 1, 1979. This program would allow domestic prices to reach the world price by October 1, 1981. [71:xi]

One of the hoped-for objectives of the decontrol would be an increase in domestic production of crude oil. This was supposed to occur due to the large revenue increases generated by the decontrol. It does not appear that this goal is materializing according to the Wall Street Journal. [41:1]

b. Petroleum Product Price Controls

The prices of all refined products were controlled until the spring of 1976. EPCA permits products to be exempted from the controls on an individual basis, as the Government decides the controls are no longer necessary. Presently, price controls exist for products such as gasoline, propane, butane, and jet fuel for commercial aircraft. Price controls for other products may be reinstated if shortages of very large price increases for those products occur. The price of controlled products equals the May 1973 price of the product plus increases in the cost of crude oil, labor costs, and other associated costs of producing the product since that time. [68:65]

c. OPEC Price Controls

The traditional method of setting crude oil prices was based upon using Saudi Arabian light crude as the marker price. Then differential increases/decreases could be calculated from this marker price to account for variations in the quality of crude being sold and the shipping distance. The objective was to present an equivalent destination price to consumers. [3:6]

This traditional cartel system has encountered some resistance within OPEC. Iraq's Petroleum Minister, Tayeh Abdel-Karim, commented on this resistance, "But we should not forget that supply and demand come into the picture as well; their relation to differentials has not

yet been clearly defined." [47:63] A result of this lack of unity is a two tier price system. There is still the traditional marker price of Saudi Arabian light crude. Additionally, there is an official OPEC floor price which has been running higher than the Arabian light crude. Additionally, there is an official OPEC floor price which has been running higher than the Arabian light. Price unity remains an OPEC goal in order to retain maximum market leverage. OPEC influence is described further in section D of this chapter and Chapter IV.

3. Product Policy

Some product differentiation must be perceived by potential customers to affect the market conduct of an industry. As mentioned earlier, consumers do not perceive a difference in the same type of fuel from different companies.

There is a noticeable difference in types of crude oil. Particularly desirable types (light and sweet) of both old and new oil sell for more than the average price. Heavy or sulfurous crude sells for less. This is because heavy and sulfurous types require more refining to yield an equivalent product mix as does light and sweet. [68:65]

In addition to price controls, the Government regulates the quantities of crude oil and controlled products in the form of supplier-purchaser relationships--see Emergency Petroleum Allocation Act (EPAA) in Chapter II. Sellers are required to offer an amount equal to the base

period (December 1973) quantity to the same buyers that constitute the relationship. This applies, even if the seller does not wish to do so. During an embargo or other abnormal supply condition--if total base period quantities are not available--sellers are required to prorate available crude oil and controlled products to buyers that constitute the supplier-purchaser relationship. [86:66]

4. Policy Toward Rivals

The fourth type of Government control is entitlements which is administered by the Department of Energy (DOE). It is an equity program that attempts to equalize the cost of crude oil for all refiners. Basically, refiners with access to unusually large amounts of cheaper, lower tier oil are required to pay a subsidy to refiners dependent upon more expensive crude oil. The actual exchange of funds occurs when refiners of lower tier crude oil buy entitlements from firms with less than the average amount of cheaper crude. The firm buying the entitlement is then "entitled" to refine its excess (above average) lower tier oil. The price of an entitlement is approximately the average cost per barrel of imported oil less the average cost per barrel of old domestic oil. [68:66]

This type of Government control guards against practices such as predatory price cutting. This is especially beneficial to smaller refiners without large suppliers of old oil.

One method apparently being used as a hedge against rivals is to diversify the firm into other products. Statistics on ownership of proven coal reserves and uranium concentrate reserves are replete with the names of oil companies. [32:162,182]

C. PETROLEUM INDUSTRY MARKET PERFORMANCE

Market performance is defined as an appraisal of how far the economic results of an industry's behavior fall short of the best possible contribution it could make to achieve these goals. In other words actual performance is compared to potential performance. [1:66] This is not an easy thing to measure. Furthermore, market conduct and performance in the petroleum industry have been inextricably intertwined with government policy to the point where it is impossible to understand one without reference to the other. [5:143]

Of the many measures of performance, perhaps profit is the best known. After nearly two years of spectacular earnings jumps, the major oil companies profits for the third quarter--July through September--were a modest six percent. This is compared to the preceding increases of 30 percent to 90 percent. [16:89] But analysts say even that small increase reflects a "major accomplishment" during an oil glut and during a recession that has slowed oil demand and hurt the earnings of diversified companies. [43] Major companies such as Texaco and Exxon attribute the third quarter earnings gains to higher prices for domestic crude oil and gas production. [38]

Petroleum pricing shows another facet of performance for the fully integrated firm, the cost of producing its crude oil is the real input cost of its refining operations. To the nonintegrated refiner, however, it is the price of crude oil that determines the refiner's input costs. The result is that any increase in crude prices will raise the costs of a nonintegrated refiner by a much greater amount than the costs of a refiner that produces any substantial amount of its own crude. [5:152]

Gasoline shortages and subsequent unprecedented price increases convinced most consumers that "gasoline is gasoline," to be bought on the basis of price rather than brand. This alone increased competition. Faced with declining domestic crude supplies and uncertain foreign oil, major oil companies responded with a drive toward greater efficiency in downstream refining and marketing operations. They closed unprofitable outlets and realigned their marketing territories. Now, even the large majors tend to exhibit regional strength rather than national dominance. [5: 143-153]

There are other measures of performance such as industry progress. An example of this is the development of synthetic fuels. Capacity is also an indicator. This is discussed in Chapter V.

D. OPEC INFLUENCE ON THE MARKET

OPEC (Organization of Petroleum Exporting Countries) was formed in 1960 in an attempt to restore the world surplus of oil and reduce higher price levels. OPEC

member nations are Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela. [19:189] The Arab oil embargo of 1973 was outward proof that OPEC had overcome its earlier difficulties in organizing and was a market factor to be reckoned with in the future.

OPEC had a profound impact upon supply. It curtailed production which eliminated surpluses. Secondly, it issued nonnegotiable price increases. This was in conjunction with increasing world demand. [19:189]

Political ramifications of OPEC actions have not gone unnoticed. U.S. support of Israel has been challenged by OPEC. Second, the sale of Naval Petroleum Reserve (NPR) crude oil has caused some problems. The record high price of $41 per barrel of NPR crude caused a ripple effect through the market--see Chapter V.

The Iranian oil cutoff of 1979 reduced the U.S. supply of crude. Perhaps a more significant result was that situations developed which the oil companies could have used to further tighten supplies and to increase prices and profits. [74:16] Examples of this are included in Chapter III.

Because the U.S. is a large importer, it must be sensitive to these pressures. In 1977, imports comprised 49 percent of consumption. Of the imports, 84 percent were from OPEC countries. [68:25] The oil companies who can, try to avoid this influence by developing their own crude reserves.

E. REFINED FUELS-A DIFFERENCE

It is reasonable to ask what makes petroleum different from any other commodity. First, it is one of the few commodities that is absolutely essential to both military operations and the industrial activities that support the Armed Forces. In fact, in the area of mobility fuels there are no substitutes. [72:9] Second, the sources are worldwide and the U.S. imports approximately 50 percent of its consumption. Hence, the political and economic climates of various unrelated geographical locations have profound effects on market and the availability of the product. Third, the enormous rate of military consumption makes it impossible to store but a fraction of the U.S. wartime, or even peacetime, requirements. DOD is the largest single U.S. energy consumer and accounts for about two percent of the national energy consumption through direct usage. The consumption level for DOD and related industries amounts to five percent of overall national energy use. [68:1] The impact of petroleum consumption during hostilities is even greater. During World War II and the Korean War, fuel comprised over 60 percent of the total tonnage transported to the theater of operations. [49:1] Fourth, transportation costs are relatively more important than for most centrally traded commodities. Refining involves very little lost weight and it generally costs more per barrel to transport products than crude.

Therefore, most of the world's refining industry is located near consuming centers. [3:2-3] Fifth, petroleum fuels are hazardous and must be handled with care.

For these reasons, energy--and in particular petroleum--has been given such high visibility from the top levels of Government and Defense. Examples within DOD--see Appendix I--include the Defense Energy Policy Council, Deputy Assistant Secretary (Energy, Environment, & Safety), and the Defense Fuel Supply Center. Outside DOD, of course, is the Department of Energy.

The elasticity of demand should be considered when the market conduct of fuel suppliers is analyzed. Elasticity of demand is the degree of responsiveness by consumers to a price change in their product. In the case of fossil fuels, elasticity of demand is apparently very low--approximately 0.1. [41:76] This means that the percentage change in quantity demanded is much less than the percentage change in price.

The elasticity of demand for fuels would rise significantly as: (1) the number of good substitutes available increase; (2) the larger the item is with respect to one's total budget; and (3) the more the product is regarded as a luxury item. A study done in 1977 stated that fossil fuels failed all three of these criteria. [41:77]

In short, inventory levels are significant. For example, the size, location, and composition of inventories allow flexibility in when a consumer buys. This flexibility is insignificant in the long run. [3:10]

F. JP-4, A PROBLEM UNTO ITSELF

JP-4 is a naptha base jet fuel which is used primarily by the Air Force. A 1975 staff study [73:19] noted that over 50 percent of the total dollar volume of the DFSC purchases were for JP-4. A review of Fiscal Year 1980 contract solicitations by the author indicated this comment still appeared to be valid. But dollar volume is only part of the problem.

A shortage of light, sweet crude oil and increased demand for light products, such as commercial jet fuels and motor gasoline for the civilian market, resulted in reduced JP-4 production by refineries. General Seamon, Commander of DFSC, identified several reasons why refiners have been reluctant to produce JP-4. [72:5]

> Among them were: A lack of refining capacity to produce light, refined products, especially unleaded motor gasoline which comes from the same naptha feedstock as JP-4; a desire to maintain higher profit margins which are available from making motor gasoline rather than JP-4; and, dissatisfaction with the requirements of the Defense Acquisition Regulations.

Each of those reasons were confirmed in subsequent testimony by representatives of petroleum suppliers and refiners. [72:5] Thus, the problem is that JP-4 production means less refining capacity to produce products with higher profit margins.

G. SUMMARY

The paradigm of structure, conduct, and performance has been used to explain the functioning of the petroleum industry. Market structure interacts and is influenced by

supply and demand. Market structure (the environment) in turn influences market conduct (behavior of the economic agents within the environment). Finally, market conduct sets the level of how well a market performs.

The U.S. petroleum industry is big business. The industry consists of four subindustries: production, refining, marketing, and transportation. Within each of these subindustries are many independent firms. The remainder of the firms, and better known, are the integrated companies.

Characteristics of the petroleum industry structure are many and varied. It is essentially an oligopoly consisting of few sellers and many buyers. Concentration ratios are modest and show a trend of increasing competition. There are arguments that barriers to entry may be high or low. Vertical integration is one of the key features of this industry. This means that firms in a subindustry have merged with their source of supply or their customer. This enables control of resources, cost economies, higher profit, an alternative to long-term contracts, and reduces the effects of the market upon the company.

Market conduct consists of pricing policy, product policy, and policy toward rivals. The potential against which an oligopoly is measured is the maximization of joint profit. However, conduct is highly regulated.

Price regulation is governed under the EPCA on crude oil and products. OPEC price selling acts as a price control. Crude oil price controls are presently being phased out.

Product policy is governed under the EPAA which established supplier-purchaser relationships using a base period (December 1973). Refined products are homogeneous, but commercial buyers and DOD contracting officers see considerable differentiation in crude oils.

Policy toward rivals is controlled under an entitlements program. It attempts to equalize the cost of crude for all refiners.

The most significant indicator of market performance has been profits. The petroleum industry is enjoying record profits due to decontrol of crude prices. The objective is to spur oil exploration and production. The OPEC market leverage has had an impact on the domestic industry.

Refined fuels are different from other products and commodities. Reasons include: (1) fuels are essential to military operations; (2) sources are worldwide; (3) the large rate of military consumption; (4) transportation costs are significant; and (5) fuels are hazardous cargo. This has resulted in high level management. Additionally, the elasticity of demand for fossil fuels is low.

JP-4 requires special emphasis. It consumes over half of the DOD fuel dollars and is primarily an Air Force fuel. Also, refiners are reluctant to produce it. It is produced from the same feedstock as unleaded gasoline and therefore, competes with unleaded gasoline for refinery feedstock. JP-4 also brings refiners lower profit margins than commercial alternatives from the naptha feedstock.

IV. PRESENT PETROLEUM CONTRACTING PROCEDURES

The purpose of this chapter is to explain the current acquisition methods for procuring bulk fuels. This is necessary to understand the issues presented in the next chapter. Historical events leading up to the present are examined first. This is followed by the current method. It covers requirements submission, the contracting cycle, and the contracting procedures.

A. BACKGROUND OF THE PRESENT SYSTEM

1. Prior to 1973

Until 1973, the DOD was able to obtain all the petroleum products necessary for support of the Armed Force's operations. During these days of a chronic glut of oil, DFSC was able to buy fuels from the surplus products of oil refineries. Additionally, it was not uncommon for DFSC to receive offers for 150 percent or more of the products it required. With such an abundance of offers, DFSC was able to acquire all the products it required at prices which were generally lower than the commercial market. Furthermore, DFSC was able to use short-term contracts in its procurements. This permitted DFSC to take advantage of favorable swings in the prices of petroleum products. [72:3]

The procurement method used during these days of plentiful supply was formal advertising. This is the preferred method of contracting by statute. [51:1A10] It is assumed that this method generates the greatest degree of competition among potential bidders.

2. 1973 Oil Embargo - OPEC I

The 1973 embargo dried up the foreign market and alerted DOD to the vulnerability of its petroleum supplies. It also demonstrated the inadequacy of the Defense Production Act as a means of obtaining fuels for the Armed Forces. Although invocation of the act occurred in August 1973, it was three months before any products were delivered. It was seven months from the invocation before deliveries were were completed. The situation eased with the end of the embargo. Sufficient products were again available, but at much higher prices. [72:4]

A major result stemming from the embargo experience was that DOD imposed a stringent fuel conservation program on the Armed Forces. That program has been very effective. Consumption of petroleum products has decreased from 727,000 barrels per day (BPD) in 1973 to 466,000 BPD in 1979. There are suggestions, however, that the readiness of the Armed Forces may have suffered because of the sharp reductions in training flights and exercises which were necessitated by the restrictions imposed on fuel consumption. [72:4]

A simultaneous development was a switch in procurement method to negotiation. This occurred because suppliers were under price and allocation controls following the passage of EPAA--see Chapter II. Negotiation was mandated by the EPAA. [73:11]

3. Cost or Pricing Data

DFSC requested in May and again in June 1974 a blanket waiver of the rquirement for contractors to submit cost or pricing data to support their prices of crude oil. This would also dispense with the DD Form 633-7, Claim for Exemption from Submission of Certified Cost or Pricing Data. Arguments for and against this topic are discussed in Chapter V. Both of these requests were denied by DSA (now DLA) Headquarters. The reason was criticism of using trade publications as the sole basis for supporting an exemption. [73:15]

In September 1974, DFSC notified contractors that in future contracts they would be required to supply DFSC with cost or pricing data for all negotiated contracts of $100,000 or more. They must also include the cost accounting standards clauses unless they qualified for the exemptions--see Truth-in-Negotiations in Chapter II. [73:26]

The oil companies responded to this hard line stand by claiming the exemption, but refusing to supply cost or pricing data. This noncooperation caused DLA to request the help of the Assistant Secretary of Defense (ASD). On

November 24, 1974, Mr. Mendola, the ASD, wrote to the Chairman of the Cost Accounting Standards Board (CASB) seeking blanket waivers of the requirement for oil companies to comply with CAS. Reasons given were that the end of the fiscal year was rapidly approaching and insufficient offers had been obtained. DOD could waive the cost or pricing data, but only the CASB could waive its requirements. CASB denied the request which meant that DFSC was required to enforce the requirement. [73:26]

The DFSC had reached an impasse with the major oil companies in contracting for its petroleum supplies with the following year just days away. The oil companies refused to supply data to back up their prices and would not enter into contracts containing these clauses and clauses requiring conformance to certain cost accounting standards. The military felt that it could not legally accept petroleum supplies without a contract even if offered by the oil companies. The impasse generated a staff study by the Permanent Subcommittee On Investigations of the Committee On Government Operations, United States Senate. [73:III]

The Subcommittee took an active role in trying to break up the impasse and appealed to the oil companies and urged them to meet their national responsibilities and enter into these critical contracts. A subsequent agreement by the oil companies resulted in cooperation and the submission of additional data to DFSC. DFSC said this

would establish market prices against which Defense purchases could be measured. Because this meant that cost or pricing backup need not be submitted by the oil companies, the General Accounting Office (GAO) was asked to examine if such exemptions were warranted. [73:III]

GAO conducted the requested audit in 1975. They concluded that the exemptions from submitting certified cost or pricing data were proper to the extent that the products acquired were the same as, or similar to, products sold commercially in substantial quantities. But the market price information obtained, from either the contractors or elsewhere, was not complete. DFSC could not insure that prices paid were equivalent to prices paid by comparable customers on recent transactions. The center determined that all 68 noncompetitive suppliers during 1975 should be exempted from requirements for supplying supporting cost or pricing data and from complying with cost accounting standards. [75:8]

Sales data obtained from the contractors was verified by comparing it with information contained in Government and industrial publications such as Platt's Oilgram and Oil Buyer's Guide. Platt's Oilgram was the publication most frequently relied upon and is a daily publication providing detailed information on prices quoted and actual sales. Because Platt's did not audit or verify the information it received, there was no way to insure

the information was current, accurate, or a representative sample of independent sales transactions. [73:8]

4. 1974 Jet Fuel Contracts

The Permanent Subcommittee on Investigations also pursued the procurement of jet fuel since it made up more than half of the total dollar volume during this time period (1974-1975). Before the embargo, the DFSC was buying jet fuel for two cents a gallon less than the domestic airlines. After the embargo, it paid an average of from four to eight cents more per gallon. DFSC proferred two explanations for this change. First, some of the airlines had long term contracts. The lower prices in those contracts carried through the embargo and beyond. DFSC did not have the protection of such contracts since they were spot buyers. Second, DFSC said it was unable to estimate its jet fuel requirements for a period longer than six months. [73:8]

The Subcommittee saw the problem differently. The answer seemed to lie in the regulations of the FEA (now DOE). Under these regulations, the oil companies were permitted to "pass through" higher costs for crude oil and other charges. Some products such as jet fuel had no limitations on pass through costs. Accordingly, the oil companies might have allocated a large share of such costs to aviation fuel. Furthermore, they might have allocated an even higher portion of such costs to the military, as

opposed to commercial airlines. The Subcommittee concluded that these procurement practices may have cost the Government millions of dollars. [73:24]

5. Iranian Oil Cutoff - OPEC II

In late December 1978, after several weeks of sporadic interruptions, oil exports by Iran were stopped. They were not resumed until March 1979. Since that time, Iran had produced an average of between three and four million barrels per day (MBPD) until the Iran-Iraq war. Prior to the cutoff, Iran had produced between five and six MBPD. [74:i]

Although the above GAO report found no evidence that the major U.S. oil companies had created the OPEC-II oil shortage in the U.S., several situations developed as a result of, or concurrent with, the reduction of Iranian petroleum exports which further tightened U.S. crude oil supplies. Reflect on the multinational oil companies' crude oil allocation procedures. Companies decreased each affiliates' crude supplies by the same percentage, regardless of the affiliates original planned source of crude oil. For example, if the company determined that their second quarter 1979 crude oil supplies would be 16 percent short of requirements, they applied this same 16 percent reduction to each affiliate's oil supplies. Another situation which developed was an unusual reduction in U.S. crude oil production. Finally, decisions of the larger

companies not to purchase crude oil on the spot market helped tighten U.S. crude oil supplies. This could have been a result of the record high levels of oil prices on the spot market. [74:ii] Prices jumped from $25 a barrel up to $40 a barrel or more. [74:8]

Crude oil price increases by producer governments as well as those quoted in the spot market were further indications of a shortfall in supplies. In economic terms, supply will always equal demand at some price. If available supplies are less than what is demanded, prices will go up until buyers are driven out of the market and supply and demand are again in balance. [74:7]

Iran's reduction in crude exports and the ensuing disruption of the world petroleum markets had a severe impact upon DFSC's petroleum procurements. The surplus market, upon which DFSC depended, disappeared. Brigadier General Seamon, Commander of DFSC, testified on October 10, 1979: [72:4]

> Over the past several months, due to increasing fuel prices and limited availability of crude oil, we have not been successful in procuring our total fuel requirements. In most instances full coverage of requirements has not been obtained even after resolicitation. In addition, we have experienced particular difficulty in negotiating reasonable prices in overseas markets.

The tight supply situation was reflected in both domestic and foreign markets in which DFSC procured its products. By early 1979, DFSC found that some of its suppliers were not delivering products in accordance with

the contracts. Others were either reducing the quantities they were offering for sale to the military or declining to offer any product at all. [72:4]

The effect of these procurement deficiencies was soon reflected in declining inventories of DOD petroleum products. Faced with declining fuel inventories, DOD had to decide between curtailing its training even further to conserve fuel or use fuel from its war reserve stocks for training. It chose the latter. This was a calculated risk and viewed as a short-term solution. [72:4]

6. Iran-Iraq War

The latest development in the environment of bulk fuel procurement is the Iran-Iraq war. Prior to this conflict which began in September 1980, the market was soft, i.e., supplies of crude oil were fairly abundant. This was primarily due to the increased production on the part of Saudi Arabia. [44] Oil companies are now beginning to have trouble contracting for new supplies despite the world oil surplus. The reason is the continuing war between Iran and Iraq which eliminated three to four MBPD from world markets. As a result, spot prices for petroleum are continuing to rise. Some crudes are once again approaching $40 a barrel on the spot, or noncontract market. [48]

Some major U.S. oil companies also reported having trouble arranging to buy crude oil on term arrangements. The big oil companies aren't buying much on the spot market. Much of the bidding up of spot prices is being done by traders. [48]

B. THE PRESENT PROCUREMENT PROCEDURE

The present system is described in three parts. The requirements submission, the procurement cycle, and the contracting procedures are presented. These evolved as a result of the contracting environment just explained and political objectives of the Executive and Legislative branches of Government.

1. Requirements Submission

Each service is responsible to determine its estimated bulk fuel requirements for peacetime consumption and for war reserve stocks by area and location. [20:22] Peacetime computation of requirements is normally based upon demand experience for the preceding twelve months with adjustment for known changes. The Prepositioned War Reserve Materiel Requirements are computed using war plans, force structure, equipment density, consumption factors, and days of supply to be prepositioned. Each service consolidates its estimated fuel requirements for a given period and submits the information to its respective Service Control Point (SCP). These SCP's are the U.S. Army General Materiel and Petroleum Activity, the Navy Petroleum Office, or the Directorate of Energy Management in the Air Force.

The SCP's review the requirements and consolidate them under the various DFSC purchase programs. They are organized by product and geographical area, some of which

reflect specific delivery requirements and ultimately contract line items numbering in the hundreds. The review is made against historical supply patterns and past contract lift rates. The requirements are examined for possible alternative modes of supply where options exist, and for potential impact of any anticipated changes in storage and distribution systems or operational patterns.

The compiled service requirement is then translated into a Military Interdepartmental Purchase Request (MIPR) by the SCP and forwarded to DFSC. The MIPR specifies as a minimum, how much of what products are to be delivered where, when, and by what mode. These requirements are submitted in accordance with the schedule in DFSC Regulation 4220.1.

Upon receipt of the SCP MIPR, the DFSC Supply Operations Directorate reviews the requirement in relation to similar requirements received from other customers. They are compared to the overall supply situation with particular reference to planned changes in area inventory levels and distribution patterns. The review may result in a recommended change to the distribution pattern, or a decision to supply the product through a means other than procurement such as redistribution of stocks from another area, or recommended procurement action. If procurement action is indicated, the SCP requirements are consolidated with those of the other services and non-DOD customers to

arrive at the total quantity by type to be purchased. A purchase request (PR) is then prepared by the Supply Operations Directorate and submitted to the Directorate of Procurement and Production. [20:22-23]

2. The Contracting Cycle

Upon receipt of the PR, DFSC is able to develop an acquisition strategy and begin the acquisition cycle. Negotiation is the required method of contracting under existing legislation--see EPAA in Chapter II.

The contracting cycle normally spans 160 to 175 days, excluding the goal of contract award 30 days before the initial delivery date. [20:23] Following receipt of the PR from Supply Operations, about 15 days is required to prepare, print, and mail a Request For Proposal (RFP). The RFP includes the terms and conditions of the prospective contract such as quantities, locations, and delivery schedules. The RFP is mailed to all prospective contractors. That includes former bidders and anyone else who requests to be added to the mailing list. Potential contractors must then be allowed 30 days to review the solicitation and prepare their responses. This time is used by the potential contractors to examine unique delivery requirements at each location and whether the mode of delivery is acceptable to them. Also, volumes and delivery schedules must be matched against refinery schedules and existing inventories. All offers exceeding $100,000 must be accompanied by cost and pricing data or market data to support the reasonableness of the offered price.

All offers go to the DFSC Market Research and Analysis Office initially. Approximately three to four weeks are required to review and qualify the supporting data for acceptance of bids. The Directorate of Procurement and Production is allowed about 35 days to negotiate with all prospective contractors. Even offers which are as high as three dollars per gallon are queried. [80] All offers are then forwarded to the Office of Data Systems for computer analysis of factors such as transportation. The objective is to evaluate the bid variations and arrive at the least total cost to the Government among the potential contract awards. Data analysis takes approximately ten days. If small business set-asides, labor surplus concern areas, or other special considerations are involved, another ten to 15 days are required to incorporate these factors into the final determination of the optimum award pattern. These factors cannot be done on the computer.

It should be noted that when contracting large programs, such as jet juel for the coming year in the East Coast region, it is normally necessary to contract with multiple suppliers. This is because no one firm has the capacity to supply the total DOD requirement. After the final mimimum cost solution is computed, approximately ten days are required to prepare the proposed contracts. These go to the DFSC legal office for contract review. This requires another 15 days.

If the contract is valued in excess of $35 million, then it must be submitted to DLA HQ for a review prior to award which requires another 15 days. Thus, the total review time for these contracts becomes 30 days. When all functions are completed on schedule, contract awards are made 25 to 30 days prior to the contract effective date. The contracting cycle is depicted in Figure 4-1.

This does not actually end the contracting cycle. Contract administration and distribution of the product are still the concern of DFSC. It is not enough to make an optimal contract award. The customer must receive the right quantity, at the right place, at the right time, of the right quality, at a fair price. Then the cycle has been satisfactorily completed.

3. Price Analysis

Exemptions from the submission of cost/pricing data are usually granted to contractors in the petroleum industry under the exemption for market price. To support the claim of market price, contracting officers develop a market price range for each procuring area and product line. The purpose of establishing market ranges is to give the contracting officers a competitive market price for a given type of product in a given area. DFSC has divided the United States into four procuring regions: East, West, Gulf Coast, and Inland. Data for the latest 30 days is obtained from the contractors and compiled by

THE CONTRACTING CYCLE

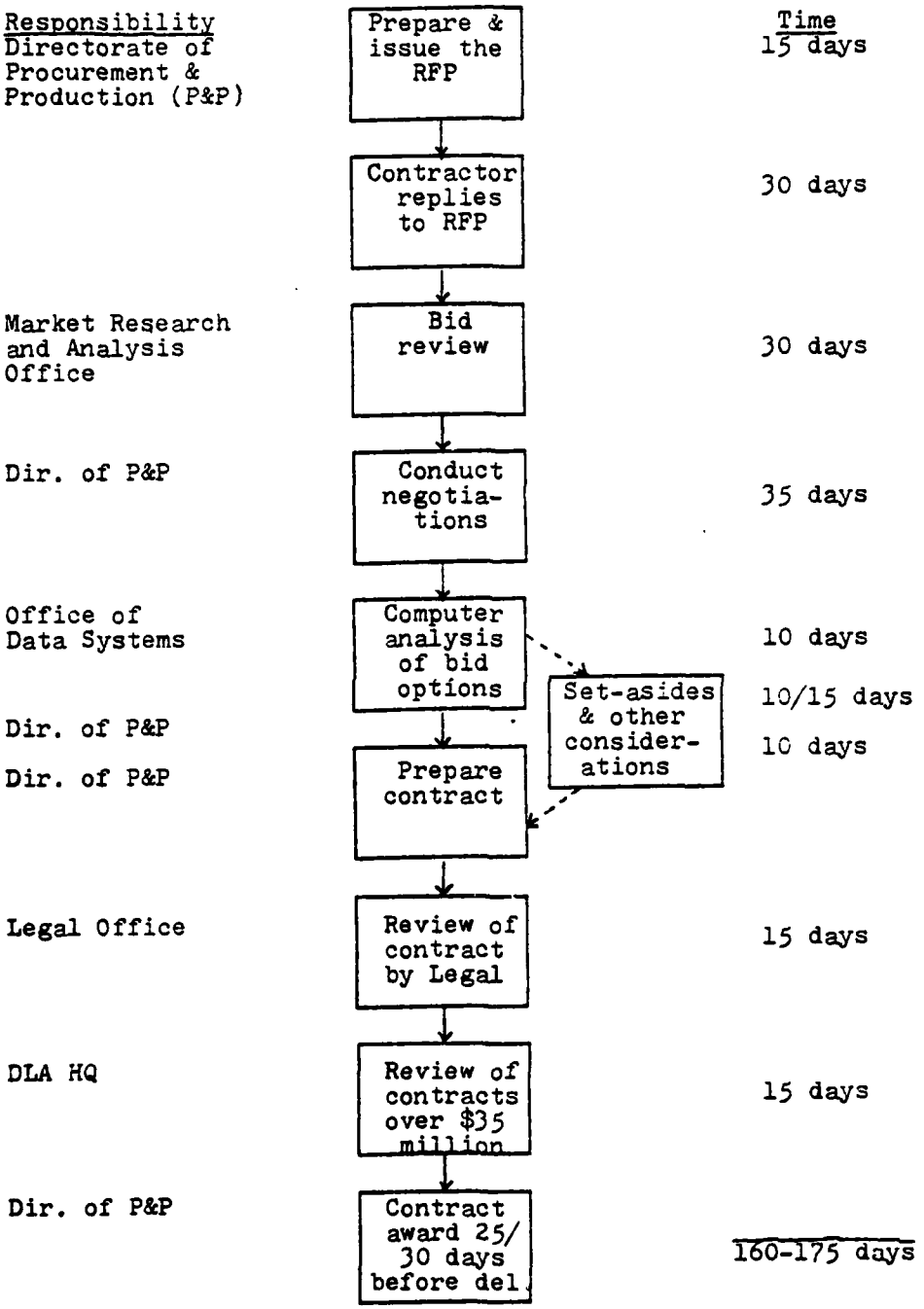


Figure 4-1

the contracting officer to construct a market range of prices where substantial sales of petroleum products were made to the general public. The high range is established by averaging all the industry high prices for the previous period by geographic area. A low range is in the same manner. Thus, the market price range is actually the differential between the high average and the low average by geographic area for the latest 30 days. [75:10]

After the market price ranges are constructed, the contracting officers perform price analysis on a contract-by-contract basis. A direct comparison of the offered price is made with the market price range. This function is done by the Center's Cost and Price Analysis Branch. [75:10] The proposal is considered for negotiation, even if it is above the competitive range. Offers below the range are accepted as a bargain.

Price analysis requires more than just comparing a quoted price with the market price range. For example, annual requirements for aviation fuel may be as much as five billion gallons. Once procured, this aviation fuel must be distributed to as many as 300 military installations. The basic objective is to procure the required fuel at the lowest laid-down (fuel plus transportation) cost to the Government. It must also arrive at destination by the required date. [29:8]

4. Bid Variations

Price analysis may not sound too complicated until one considers all the bidding options that are available to the oil companies. Consider that there are five modes of transportation which are available for fuel shipment. The Government has numerous transshipment points which are available for routing and storage purposes. Second, many of the larger oil companies possess several shipping points, each of which may have limited shipping facilities as well as limited supplies of fuel. Third, the potential contractors may bid either "Destination," which represents a laid-down price to a specific installation, or "Origin," which requires that the Government pay the shipping cost (as well as determine the destination and routing) for transporting the fuel. Fourth, there may be price breaks on separate quantities. A company may "tie in" its bid to one or more separate companies. That is, it makes its maximum offer contingent upon the amount awarded to other (specified) bidders which are its customers. Finally, a company may indicate a minimum or maximum acceptable quantity for one or more shipping points. [29:9-10]

5. Linear Programming

The magnitude of variables to consider in evaluating bids may seem awesome, but it is handled quite routinely by linear programming. The objective of a linear program is to allocate the fuel resources to meet the stated needs

in the optimum manner. However, there may be still more features to consider in bid evaluation. Factors such as discounts, time options, escalations based upon increased crude oil prices, and small business set-asides must be dealt with exterior to the optimization model. [29:9-10]

As one might suspect, no computer processed algorithm conclusively solves the problems of procuring fuel. Many subjective considerations must still be dealt with exterior to the optimization model. The judgment of experienced experts remains as the most important element in the system. Linear programming does, however, provide DFSC managers with a sophisticated, highly efficient tool for dealing with the quantitative aspects of the problem. Furthermore, it allows them to allocate their time and effort more effectively elsewhere. [29:34]

6. Set-Asides

The RFP may be either an unrestricted procurement or a set-aside. A set-aside is either total or, as in most cases, a partial reservation by percentage. The set-aside may be earmarked for small business only, or labor surplus area concerns only, or a combined small business/labor surplus area concern.

Set-asides stem from the Small Business Act and represent the desire of Congress that small business should receive a fair share of the Government's procurement dollar. [4:565] A firm bidding on a contract for bulk fuel is classified as small by the DAR if: [DAR,1-701.1]

(i)(i) its number of employees does not exceed 1,500 persons; (ii) it does not have more than 50,000 barrels per day crude oil or bona fide feed stock capacity from owned or leased facilities; and (iii) the product to be delivered in the performance of the contract will contain at least 90 percent components refined by the bidder from either crude oil or bona fide feedstocks.

7. Negotiated Procurement

A typical scenario is described based upon the case file of a DFSC negotiated procurement. [56] This scenario provides the negotiation sequence and key decision points in fuel contracting.

The contracting officer receives a proposal for JP-4. The proposal is accompanied by a request for exemption from the cost and pricing data and CAS. Sales data is provided to justify a market price. The present trend in the industry is that all companies are requesting the exemption from the cost or pricing data. A DFSC spokesperson indicated that DFSC has not rejected any requests if the offer was in the competitive range or qualified for catalog exemption.

The ultimate objective of the Government, in this case DFSC, is to obtain the JP-4 at a fair and reasonable price. This implies delivery of the JP-4 according to the schedule published in the RFP. The negotiation process consists of many steps and involves much planning to enable DFSC to reach its objectives.

Requirements are in a dynamic state. To keep possible offerors informed of pertinent data, amendments are provided to companies. The offerors must comply with all provisions of the RFP and its supporting documents as of the time of their submission.

The JP-4 price data is evaluated using the acquisition cost of crude oil for a base. A differential between the market area average cost of crude and the market area average product price is calculated. An alternative differential is between the contractor's average cost of crude and his average product price. This provides DFSC a picture of the offeror's markup. From this data and analysis, the contracting officer forms the Government negotiation objectives. They are the Government's going-in objective, the low, and the high. The contractor sets similar objectives. The contractor's high price is considered to be his initial offer.

Sound management practice requires the contracting officer to keep his superiors informed. During a pre-negotiation briefing, the contracting officer informs the approving authority about his objectives, how they were developed, and obtains comments on these. This briefing and the subsequent Memorandum For Record (MFR) represent a Pre-Negotiation Business Clearance. The extreme points which form the objective positions are determined logically. For JP-4 a composite market price is used. It is composed of a weighted average of 70 percent gasoline and 30 percent kerosene. This is because JP-4 is not sold commercially. At the low objective, the low of the composite fuel range (equivalent to JP-4) will be used unless the contractor has a lower price for JP-4. This is advantageous to the Government since gasoline and kerosene are sold in

substantial quantities to the general public. It is also necessary to support the claim of substantial quantities sold to the general public. If the contractor's price for JP-4 should happen to be lower than the composite, then the lower of the two prices will be used. The same rationale is used to determine the high objective. It is established at: (a) price no higher than the high of the market range or (b) the contractor's offer, whichever is lower.

Negotiating tactics and principles are revealed in the above mentioned MFR. It is the policy of DLA that all negotiations will be opened at prices below the low objective, provided that the artificial low can be supported. This is done in order to keep the Government's negotiations on an equitable footing with the respective contractors. In order to remain abreast of the pricing data, DFSC updates the market for JP-4 on a daily basis as the negotiation approaches. This enables DFSC to update the negotiation objectives to the same point in time as the latest market range should the contractor revise his offer with more recent prices.

The Memorandum of Pre-Negotiation Briefing may confirm that the contractor would not be required to submit cost or pricing data. The exemption is justified with DAR 3-807.3 (f) which relates to the market price exemption. Non-price objectives would be recorded here. An example would be to encourage the contractor to sell more JP-4 than he offered.

The Price Negotiation Memorandum records the results of the negotiation. A successful negotiation requires that

a mutual price be agreed upon by the buyer and seller. It is common practice for negotiations to begin with the seller at the high extreme and the buyer at the low extreme. The negotiation process should bring the two parties toward a mutual agreement. In order to reach this mutual position, the high objective for DFSC (buyer) must overlap the low objective for the seller. If this does not occur, then one or possibly both of the parties must modify their respective positions until a price is agreed upon. This is the basis of the contract price and how it was determined. DFSC has the option to award the contract, based upon the initial offer, without discussion of the proposal. Since it would be difficult to demonstrate that adequate competition is present and that the initial proposal would result in a fair and reasonable price, this is seldom done. For example, even a few pennies saved would result in a significant savings with a contract for 50 million gallons.

One final comment on negotiation. The Defense Contract Audit Agency (DCAA) has ruled that cost and pricing data cannot be applied to petroleum. [86] This will be dealt with in the next chapter.

8. Contract Types

Contract awards may be of two types. The most common is the Fixed Price with Economic price adjustment (FPE), also called Fixed Price with Escalation. [86] This is used when sellers are reluctant to quote a Firm Fixed Price (FFP)

because of the risks associated with inflation. Therefore, the Government and the contractor agree on a marker crude price. As the marker price escalates, so does the price of the fuel being sold. The economic price adjustment can also occur downward, but this is unlikely with fuel prices.

The other type contract award which can occur is an FFP contract. This is used sometimes for spot market buys or purchases with a short delivery time. Another circumstance is when a new contractor has not had time to accumulate crude oil costs. [86]

9. Product Distribution

Transportation of petroleum products is a major item of expense in procuring fuel. Because of the cost of transportation, contractors and DFSC give much consideration to the scheduling, routing and coordination of petroleum movements.

In general, companies control the general level of product distribution costs by picking strategic locations for their refineries and primary terminals. By locating near population centers and, wherever possible, on navigable water, they can avail themselves of high volume movements with resultant low unit costs.

Product distribution follows quite orderly, defined lines, but the combination of modes for moving the products may be somewhat complex. All practical combinations of terminals, distribution plants and transportation media are

employed in moving products from the refiner to the DFSC customers. Bids are predicated upon the selection of the least cost combination of these factors. The optimum goal is to move the product as directly as possible with as large a quantity as possible. [57:181]

a. Product Pipelines

Product pipelines in the U.S. generally flow from refining areas, mostly along the Gulf Coast in Texas and Louisiana, to major consumer areas along the East Coast and in the Midwest. Products lines are largest at refining areas and get progressively smaller as products are dropped off at terminals or metropolitan areas along the route. Small stub lines serve individual refineries. [12:116]

The extraordinary efficiency of pipelines makes them the preferred mode for overland transportation of fuel. In 1974, product pipelines trasported about 30 percent of the total traffic in refined products. [57:128] Pipelines are the cheapest, most dependable, and energy efficient mode of transportation. The reason they are not in greater usage is because of their point to point service. A user must be near a pipeline to benefit from its advantages.

b. Tank Barges

Tank barges are designed to transport bulk petroleum for comparatively short distances in harbors, coastal or inland waters. Use by DFSC and contractors requires access to these same waterways. The cost of operation varies from a level comparable with pipelines to slightly higher. [57:128]

c. Tank Trucks and Tank Cars

Tank trucks and railroad tank cars are used for transporting bulk petroleum products between points not served by pipeline or water transportation facilities. Tank trucks have an advantage over tank cars in that they can deliver directly to the ultimate consuming equipment. Both offer speed of delivery, but at a higher cost than the other modes. [57:128]

d. Product Flow

Orders are placed against the contracts by a variety of offices, generally determined by the mode of delivery. [20:23] When delivery is by direct pipeline connection to a bulk storage facility, the orders are usually placed by the receiving activity. If delivery is by tanker, orders are placed by the DFSC Tanker Distribution Division. It coordinates activities with the Military Sealift Command's Tanker Operations Division. When delivery is by barge, tank truck, rail tank car, or through commercial pipeline operating companies, orders are placed by the Defense Fuel Regional Offices in coordination with the Military Traffic Management Command (MTMC).

Typically, distribution is via pipeline when possible. The product will then be stored in a Defense Fuel Support Point (DFSP) for subsequent delivery by other modes. A DFSP is a terminal and may be Government owned Government operated (GOGO), or Government owned contractor operated

(GOCO), or contractor owned Government operated (COGO), or contractor owned contractor operated (COCO).

DFSC also has the responsibility to maintain product quality up to receipt by the user. Sometimes this is done by Quality Assurance Representatives (QAR) at the refinery. Othertimes, the Defense Contract Administration Services (DCAS) verifies the quality at the DFSP or receiving terminal for example. [81]

One interesting distribution technique used by oil companies is product exchanges. These exchange agreements can have a significant impact upon a company's transportation costs. For example, an integrated refiner, X, may have plenty of JP-4 at location A, whereas its refinery is some distance away at location B. If it can locate another refiner, Y, who needs JP-4 at A and has a surplus at B, X will agree to swap JP-4 to Y at location A and receive an equal volume from Y at location B. Crude oil exchanges, in contrast to product exchanges, are normally simultaneous purchases and sales.

There are real economic benefits from exchanges, as the industry points out. Wasteful cross hauling is eliminated, and transportation charges are maintained. Many economists, however, are concerned about exchange agreements. For one thing, they foster close working relationships among competitors in production and supply. For another, it would seem that the economic benefits of exchanges could be achieved as efficiently through open market transactions. [5:149-150]

C. SUMMARY

DFSC has traditionally been a buyer of surplus products from refineries. Thus, when crude is plentiful, fuel is relatively easy to buy. But when times are hard, such as OPEC I and OPEC II, DFSC is in an awkward position. Refiners cater to their regular customers. This has been partially offset by the EPAA and the EPCA. Additionally, fuel conservation measures have been taken by the DOD.

Cost and pricing data has had and still has an uncertain role in fuel procurement. With the advent of negotiated procurement, it became a requirement. DFSC contracting officers exempted the oil companies from compliance on the basis of market price. DFSC has been criticized for this policy by GAO and DLA among others. The latest development is that the DCAA ruled that cost and pricing data did not apply to petroleum. Attempts by DFSC to obtain blanket waivers were unsuccessful.

The present procurement procedure can be described in three parts. The initial phase is the annual requirements submission by each Service. These are based upon past consumption and known changes. Fluctuations in war reserve stocks are also included. Requirements which cannot be met by redistribution of stocks are combined into a purchase request (PR) by the DFSC Supply Operations Directorate and forwarded to the Directorate of Procurement and Production.

The contracting cycle comes next and normally requires 160 to 175 days. During this time, the PR is transformed

into a Request For Proposal (RFP). The RFP is sent to prospective contractors informing them of the necessary fuel quantities, locations, and delivery schedules. Potential contractors respond with offers. The offers are then evaluated at DFSC HQ for accuracy of supporting data in the offer and data analysis of bids to determine the optimum cost alternatives. Negotiation is used to arrive at a fair and reasonable price for the product with the contractor. Potential contracts are reviewed by DFSC legal and when in excess of $35 million, by DLA HQ.

Existing contracting procedures are a synthesis of legislative and administrative constraints. Price analysis is used to construct a competitive range and evaluate a contractor's offer. Bid variations can be diverse and complex. But the speed and efficiency of linear programs (LP) enable a contracting officer to accurately compare the relative costs. Set-asides complicate the job of the contacting officer since they must be dealt with external to the LP. Negotiated procurement is a series of interactions with superiors and potential contractors to arrive at a fair and reasonable price. Contract award is then possible.

Contract awards are usually FPE contracts. FFP are occasionally used for spot market buys and when new contractors have not established cost data.

Distribution of the products is a complex process. Fuel seldom is transported in strict compliance with the contract.

Yet the customer gets what he needs when and where he wants it. Quality is maintained via inspections at the refinery and other critical locations.

With the current procedures in mind, it is now possible to discuss the problems with the procurement of bulk petroleum. The problems are varied and numerous.

V. BULK PETROLEUM PROCUREMENT ISSUES

Shortfalls in the procurement of bulk petroleum by DFSC as recently as 1979 have caused concern among legislators. The Investigations Subcommittee of the House Armed Services Committee [72] investigated this problem. It wanted to determine the impact of OPEC II and the procurement shortfall upon DOD and the defense capabilities of the U.S. Armed Forces. While inventories of all military fuels were depleted during 1979, the most seriously affected were jet aircraft fuels, particularly JP-4.

General Seamon, Commander of DFSC, noted that one of the lessons DFSC learned from its recent acquisition problems is "the need to reassess our methods of acquiring petroleum products." [72:5] That need was recognized by Deputy Secretary of Defense Claytor as well. Clayter testified that he had initiated a review of petroleum contracting procedures in an effort to encourage suppliers to respond to DFSC fuel solicitations. The following issues have been identified as contributors to the reluctance by oil companies to contract with DFSC: [72:6]

> Much testimony was received concerning fuel contract provisions, which suppliers considered onerous and which tended to discourage them from dealing with the Government. General Seamon identified wage and price guidelines, allocation clauses and deceleration clauses in Government fuel contracts as examples of provisions which were regarded as burdensome by suppliers. Witnesses representing suppliers and refiners identified other

problems they encountered in supplying the Government. They cited the time required by the Government to accept an offer to supply products, i.e., generally a month as opposed to a few days or a week with most commercial buyers. They stated they believed that contracting documents were too long and required extended periods for analysis. It also was pointed out that negotiations with the Government sometimes consumed several months.

Suppliers also complained of the length of time required to obtain payment on a Government contract. Some suppliers complained of the option which DFSC reserves to take only as much fuel as it needs; e.g., so long as the Government takes $100 worth of the contract quantity, it is regarded as having complied with the contract and is not required to accept delivery on the balance of the contract quantity, regardless of whether that might be for fuel worth several million dollars. Witnesses also testified that they believed many of the standard provisions of the Government's fuel procurement contract were not essential and tended to discourage suppliers from responding to military fuel solicitations. As an example, it was pointed out that a Government jet juel invitation for bid contained over 100 pages, while a similar invitation of an airline contained an average of 7 to 10 pages.

The purpose of this chapter is to highlight the major issues as perceived by the petroleum industry and the DOD. The issues will not be rank ordered by degree of importance. The objective is to outline each issue, why it is considered a problem, and present perspectives on the issue. Only then can alternatives be considered to deal with the issues.

A. THE DEFENSE ACQUISITION REGULATION (DAR)

The DAR establishes uniform policies and procedures relating to the procurement of supplies and services for the DOD. This is under the authority of Chapter 137, Title 10 of the United States Code. [DAR:1-101] There has been much dissatisfaction expressed concerning the requirements

of the DAR. Some companies feel this is the key problem with fuel contracting. Oil companies perceive the DAR as being a set of general rules which are applied to all procurement situations. [79] It's purpose is compared to that of the Uniform Commercial Code (UCC). The purpose of the Code is "to achieve uniformity in the laws of the several States relating to business transactions so that trade and commerce will not be hampered by a plethora of differing and sometimes conflicting rules." [7:III] This parallels the intent of the DAR. The implication appears to be that a broad set of rules is not totally applicable to a specialized industry.

In spite of the broad application of the DAR, one industry spokesman commented that it appeared to work well for hardware procurement. Hardware procurement was defined as aircraft, tanks, and construction contracts.

There was general concensus that the DAR was prescribed by law. The criticism is directed at the lack of recognition for accepted industry customs. It is interesting to note that one of the stated underlying purposes and policies of the Uniform Commercial Code is "to permit the continued expansion of commercial practices through custom, usage and agreement of the parties." [UCC,1-102] There is also general agreement among the oil company representatives interviewed that there is little chance of significant change to

the DAR with respect to petroleum procurement. The DAR reflects legislative goals now and will continue to be constrained for the same reason.

All the contractors acknowledge the need for the Government to protect the taxpayers' money. After all, the Government contract agencies are not immune from fraud and inefficiency. Yet the question remains, "How much Government control is necessary?" [79] This complaint has not gone unnoticed. It was noted in the report of the Investigations Subcommittee that progress has been made: [72:6]

> The contract review task force established by Deputy Secretary Claytor has made significant progress in streamlining petroleum contracting procedures. At the subcommittee's final hearing on February 25 (1980), the Department's (DOD) witness reported that, after reviewing the entire contract form, the task force had eliminated approximately two-thirds of the clauses from contracts used in the foreign market, and about one-half of the clauses from its domestic contracts.

The author questioned contractors about their perceptions of these initiatives. Most consider the changes mentioned in the above report [72:6] to be a step in the right direction, but their impact is superficial. Specific clauses and proposals mentioned as alternatives will be addressed later in this chapter.

B. SOCIO-ECONOMIC CLAUSES

At least one company perceives the key problem in contracting with DFSC to be the imposition of socio-economic goals upon the Government contracting process. It was

suggested that every special interest group with any clout could corner key congressmen to promote a bill that would further their cause through the contracting process. Rather than make a fight, it was commented that oil companies prefer to weather the storm on lesser issues. This is due to what the oil companies see as bad publicity over increased profits.

A variety of socio-economic programs are imposed by legislative and administrative edict on defense procurement. The Commission on Government Procurement (COGP) recognized 39 socio-economic programs as having impact upon Government procurement. [76:77] There have been more added since the report was published in 1972. According to Peter Dineen, [36:8] a "socio-economic program is defined as any executive, legislative or departmental program or policy that is basically designed to promote, advance or achieve social benefits through economic means." Although Douglas Hutchens states [51:10-22] "with few exceptions the guidelines for implementing the socio-economic requirements specify that the programs will not add to the total price of the contract." However, he goes on to state that the conclusion of the COGP is that these programs do add significant additional costs. Furthermore, the COGP concluded, "The cumulative effects of these programs already imposed on the procurement process and the addition of those contemplated could overburden it to the point of threatening breakdown." [69:Vol I:111]

A DFSC contracting officer stated that the cost to the oil companies was in terms of extra time to comply, extra personnel to supervise the administration, and of course money to comply with requirements. [86] It is no secret that these additional costs for compliance are passed on to the customer, DFSC.

The oil companies say their current solution is to cooperate fully with DFSC and work within the system. Their true goal is to streamline the contracting process to more closely resemble commercial practices. They fully recognize that the two processes cannot be identical.

Government contracting officers are not enamored with implementation of the socio-economic programs. The area seems to have conflicting rules, more restrictive actions, and assumes an all-knowing attitude on the part of the procurement managers.

The conclusion of Hampton and Lorrette [18] is that these programs are politically enticing and will continue to target the federal procurement programs for implementation. Consequently, this thesis does not suggest there is a better way to implement socio-economic goals, but accepts this as a current reality.

C. DIFFERENCE BETWEEN GOVERNMENT AND COMMERCIAL CONTRACTS

There is a widespread impression that Government purchasing is totally different from commercial purchasing. This impression is not altogether valid. Both Government and

industrial purchasing are concerned with buying the right quality, in the right quantity, at the right price and time, and from the right source. However, Government purchasing frequently involves special considerations which are not usually applicable to the purchaser in private industry. [4:541] This section explores the key differences affecting petroleum procurement in industry versus Government.

1. Items Purchased

DFSC and commercial customers are buying the same products, with one notable exception. JP-4 is produced primarily for the military. The military equivalent of commercial jet fuel is JP-5 which is used by the Navy. This one exception is not insignificant since it represents over one-half of the DOD total fuel requirement. It was mentioned in Chapter III that JP-4 is a direct competitor with unleaded gasoline. Therefore, when demand for unleaded gasoline is high, it becomes more difficult to buy JP-4. Refiners have a larger market for unleaded gasoline than JP-4. Additionally, unleaded gasoline is sold to the industry's regular customers whereas JP-4 is sold to DOD as a spot market customer. [91]

The challenge for DFSC is to maximize its market strengths as a large customer and minimize the product differentiation it faces. With product differentiation such as JP-4, the seller's bargaining position is strengthened.

2. Source of Funds

Another major difference between commercial and Government purchasing is the source of funds used for the purchases. At all levels of Government, taxes paid by citizens and businesses are used to purchase the required fuels. The appropriation and authorization process and the DAR allow the Government contracting officer considerably less freedom of action and discretion than business allows its industrial counterpart. While these procedures are designed to protect the interest of the taxpayers, they generally result in less flexibility and in many cases, greater total cost than would occur if the Government used profit-oriented business purchasing techniques. [4:542]

Budget flexibility can save money. Spot market buys or purchases of larger quantities can sometimes result in a cheaper price for fuel. However, DFSC can only make use of this when normal procurement action does not meet requirements. Of course to use this flexibility requires adequate storage space for the fuel and a projected use before the fuel deteriorates.

3. Authority of Contracting Officers

Under the Constitution, the Federal Government is a government of delegated powers only. Its contracting officers lack the full powers and the broad management authority of a corporate executive. The contracting officer must have "express" authority, delegated via a written warrant,

in order to obligate the Government and enter into a contract. In commercial contracts, the buyer is acting under "apparent" authority. The UCC states that under the law of agency, a seller acting in good faith may reasonably assume the commercial buyer has authority comparable with that of similar agents in similar companies. The seller may hold the buyer's company liable for their agent's actions. [7:316] Conversely, the Government is not liable if its agent act without express authority.

The reputation of the DFSC contracting officers was mentioned by all oil companies. Without exception, the comments were that the contracting officers were extremely knowledgeable, professional, and helpful in dealings with the contractors.

4. Contract Documents

There is a significant disparity between the commercial and Government contract length and complexity. A typical DFSC contract is in excess of 100 pages whereas the commercial equivalent ranges from one to ten pages. A representative comment from industry concerning the length of a Government contract is, "It takes 15 minutes just to find what volume of fuel the contract requires." [82] One spokesman attributed the difference in size to the inclusion (or absence) of the socio-economic clauses. The commercial customer is not concerned with these legislative requirements, but in obtaining the fuel at a fair price from a reliable contractor.

In addition to the length, the contract complexity must be considered simultaneously. A general perception is that contracts are filled with legal language and are difficult to understand. Interpretations of clauses are often a culpit. Typically, a contractor interprets to his advantage, DFSC may disagree, and then discussions result in an attempt to reach a mutual understanding.

Each contract solicitation and contract award must be reviewed with a fine tooth comb. Clauses may change or may be included by reference. This requires oil companies to maintain an accurate and current copy of these clauses on file.

Potentially the most devastating consideration to the contractor is the Christian Doctrine. The Christian Doctrine is based on the landmark case of G.L. Christian and Associates vs. United States (312F 2d 418, ct. cl; 320F 2d 345 (1963)). The Doctrine says that if the DAR requires a clause and it is inadvertently left out, the contractor is still bound by the clause. This interpretation was because the DAR is statutorily based. Many clauses are mandated by legislation and it is a well established principle that, "Ignorance is no excuse under the law." Thus, it behooves the oil companies to be as familiar with the DAR as the DFSC contracting officers.

5. Contract Relationship

The Federal Government plays a dual role in contracting. In one role, the Government is a sovereign, and as such

can determine the conditions for doing business in the Government market. For example, it can regulate the actions of its prime contractors. As a buyer, the Government is unique in its ability to pass laws that influence purchasing transactions. For instance, P.L. 87-653 gives Government buyers the right to examine suppliers cost or price data under cettain conditions. [4:549] Furthermore, the Government deals with its contractors at arms length. The Government does not guarantee a contractor against loss or bankruptcy.

Oil companies have considered DFSC to be a spot market buyer. This was consistent with the DFSC position of buying from the industry excess. This relationship denied DFSC certain services which commercial buyers enjoy. Now, DFSC receives much of its fuel through allocations.

Regular customers of the petroleum industry receive additional consideration. Industry spokesmen commented that the regular customers get first priority on deliveries. Sometimes sales of fuel and shipment occur on the basis of a phone call and without a contract. But there is more to a relationship than the exchange of fuel for money. Commercial customers often receive management expertise from the firm as a service to the customer. Company reliability and assistance are factors in causing a customer to return

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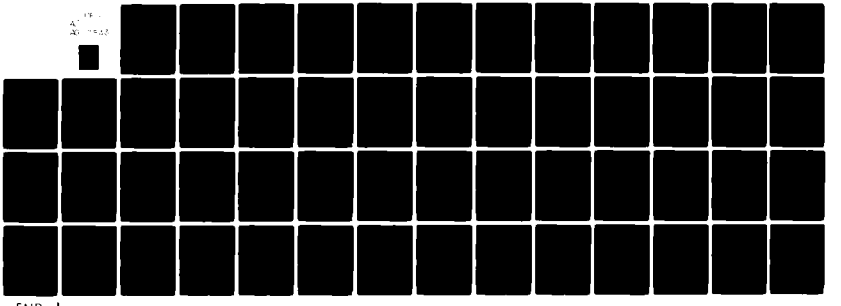

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again. Because the Government contracting officer must normally contract with the lowest bidder, contractors feel less obligation to provide these same services to the Government. Advice and management time provided to the Government may result in a situation where another competitor benefits.

6. Sources of Supply

The degree of freedom that exists in selecting sources of supply offers another excellent example in contrast between commercial and Government buying. Since both parties use negotiated procurement, in theory they both select the suppliers who offer the best deal. However, the Government contracting officer must frequently divide a portion of the total requirement into a set-aside. The set-aside can be for small business or a labor surplus area concern or both. This requires solicitation of companies fitting this category, but they may not be the low cost supplier. [4:564] The commercial buyer is free to choose suppliers on the basis of total value. DFSC contracting officers solicit using a bidder's list, plus anyone who requests to be considered.

7. Procurement Administrative Lead Time

It requires considerably more time to plan a solicitation and negotiate with potential contractors in Government procurement. Commercial deals can be consummated in a few hours or days. DFSC needs weeks to accomplish the same function. This is due to policy constraints on the contracting officers. [79]

8. Reserved Contractual Rights of the Government

The Government reserves some important rights governing the actions of contract parties. Certain clauses are not subject to waiver by the contracting officer or negotiation. Examples include the Changes Clause, the Disputes Clause, and the Termination for Convenience Clause. [23:250] These clauses and others slant the contract in favor of the Government.

The Changes Clause provides the Government the unilateral right to direct changes in the contractor's actions. The Disputes Clause allows the contracting officer to make a final determination in disputes between DFSC and the contractor. Finally, Termination for Convenience can be unilaterally directed. This is not without cost since the contractor is entitled to an equitable adjustment for completed work, preparation for termination, plus a reasonable allowance for profit. But one can see, these actions are hardly standard fare in the private sector.

The basic intent of contracting officers in the Government and buyers in the private sector is similar. The differences stem from the legislative and administrative constraints upon DFSC. For a more thorough treatment of this subject, the reader can refer to Lee and Dobler, pages 541 through 577.

D. COST OR PRICING DATA

Contractors are required to submit cost and pricing data under certain conditions--see Truth in Negotiations, Chapter II. This is equivalent to opening the company books for inspection as a condition of doing business. This is considered a major issue by the oil companies.

All oil companies who request exemption from the requirement to justify their catalog or market price are being approved. [80] Consequently, the concern is that less than a blanket exemption may lead to enforcement some day.

E. COST ACCOUNTING STANDARDS

The same exemption as cost or pricing data applies to Cost Accounting Standards (CAS). The exemption is for established catalog or market prices of commercial items sold in substantial quantities to the general public--see Chapter II.

The Report of the Investigations Subcommittee of the House Armed Services Committee identifies CAS as a major obstacle in fuel contracting. [72:6] The reason is that CAS enforcement would require double accounting due to industry custom. A representative comment is that companies are not going to rework accounting systems when the DFSC is not their major customer.

Petroleum is a joint product which means it would be difficult to determine how to allocate costs. Currently, there is no single cost accounting method of allocating

costs to different products that are produced by the same process, commonly called joint products. An example of the problem is how to allocate the cost of a barrel of crude oil to the various products of a refinery. [55:85]

CAS and cost or pricing data are intertwined: [55:86]

> If there are no competitive quotations or suitable market prices, contracts for fuel supplies must be negotiated on the basis of cost and pricing data. In these circumstances it may become necessary to base contract prices on costs. In the absence of a Standard on allocation of joint product costs, it would be difficult if not impossible to reach agreement on joint product costs allocable to a particular contract.

The Cost Accounting Standards Board (CASB) attempted to deal with this cost allocation issue. Originally, five separate Standards on indirect costs were proposed in March 1978. The five proposals were reduced to three in July 1979. On promulgation, those three proposals were consolidated into a single Standard on allocation of direct and indirect costs. [54:3483]

Cost Accounting Standard 418, Allocation of Direct and Indirect Costs was the result of the CASB work. It became effective on September 20, 1980. The Standard does not seem to address the sticky issues of cost allocation of petroleum products except in a very general manner. For instance, an issue paper asked for views of interested parties on methods of allocating joint costs, the definition of by-products, and accounting for by-products. [66:10-752] Standard 418 which resulted does not mention these issues.

The CASB is no longer in operation. However, the Cost Accounting Standards in existence are being maintained. This leaves the petroleum industry in the same predicament as before. Firms continue to request the exemption and hope CAS is not enforced.

Both cost and pricing data and CAS are enforceable from a Government perspective. This is because the contract contains the Audit by DOD Clause. [DAR 7-103] Therefore, the contracting officer designated representatives, such as the Defense Contract Audit Agency (DCAA), have audit and inspection rights. There can be examination of cost or pricing data and reports submitted by the contractor.

Worthiness of cost or pricing data and CAS hinges on time and money. It is the author's opinion that the use of market data is a viable alternative.

F. PAYMENT PROCEDURES

Industry officials commented on an apparent breakdown in administration after the contracting officer is notified of a price increase. Oil companies must formally notify the contracting officer of a price increase. The contracting officer must in turn notify every administration center who makes payment of the price increases. This requires time.

The problem is at the point of payment. If the authorizing official has not received the price increase, two things can happen. First, the official may refuse to make any payment until the apparent price discrepancy is resolved. This is the worst result for the contractor. It decreases his cash flow.

The second is that sometimes payment is made on the delivered quantity at the old price. This is equivalent to a partial payment. The difference is paid following notification of the price increase. However, long delays sometimes result since payment centers are not equipped to deal with partial payments on a complete shipment.

Oil ompanies took steps to combat this delay. Payments are now due upon receipt of the invoice. For example, one company noted that commercial customers pay within a couple of days.

The delay in payment is one cost which cannot be passed onto the Government. For one company to attempt this would probably cause its bid to exceed the ceiling price of the competitive range.

The contract review task force established by Deputy Secretary of Defense Claytor instituted a "fast pay" procedure. [72:6] This allows suppliers to be paid upon presentation of an invoice.

It appears that the notification of price increases to payment offices will continue to generate payment problems. Price changes come frequently due to domestic crude oil deregulation and OPEC manipulations. Speed of notification to payment offices is the key to improve this issue. Decentralizing the payment authority is one suggestion to improve this procedure. [88]

Delay in payment is not unique to commercial contractors. DFSC also has a cash flow problem. The Armed Services are not billed until after the monthly stock report is submitted by the Defense Fuel Supply Regions to DFSC Headquarters. This procedure creates a 60 to 90 day delay in reimbursement to DFSC by the Services. [81]

DFSC is installing a computerized inventory system to correct its cash flow problem. The Defense Fuel Automated Management (DFAM) system will notify DFSC HQ electronically of shipments to Service customers. This will enable rapid billing. [81]

G. PROFIT MARGINS

Oil companies typically price refined products using the "balanced barrel" concept. The balanced barrel concept is based upon the fact that a barrel of crude oil always yields various types of refined products. The variation in percentage of the total barrel can only be maximized to a finite degree. For example, the average annual yield of gasoline from a barrel of crude oil is 45.5 percent compared to 6.8 percent for jet fuel. [26]

While production of a refined product in high demand can be maximized, a market must still be found for the rest of the refined products from the barrel of crude oil. Therefore, the supplier must sell low demand refined products near cost or even at a loss to deplete inventories. An example is petroleum coke.

Conversely, high demand products are sold at a profit sufficient to offset the low profit margins or losses from the low demand products. [35] Historically, gasolines and refined petroleum products for aviation have been ideal targets for profit maximization. This is because, unlike distillates and residual fuels, there are no alternatives/ substitutes and demand is quite inelastic. [47:192]

Higher profit margins are available from making motor gasoline than can be obtained from JP-4. [72:5] This is due to two reasons. First, there is greater demand for gasoline than JP-4. Second, JP-4 has only a military application and is considered to be a low quality jet fuel. Therefore, it is sold for less than higher quality jet fuels such as JP-5 and Jet A-1. [81]

In periods of tight crude supply, oil companies have little profit incentive to produce JP-4. JP-4 production reduces the capacity of unleaded gasoline since they come from the same feedstock. Furthermore, industry does not consider DFSC a regular customer. The Government contracting milieu is a further disincentive. Plus, a company's first obligation is to its stockholders. However, support of the Government is more than a matter of economics. [85]

Crude oil decontrol enables higher profit margins. It was mentioned in Chapter III that profits are up to record levels early in 1980. Recent financial statements for the third quarter of 1980 show a significant reduction in profit increases.

When markets are soft--supply exceeds demand--the Government has little problem obtaining JP-4. Oil companies want the DFSC business and are willing to accept a lower profit margin than can be obtained from unleaded gasoline.

H. PRICE ESCALATION

Spurred by inflation and OPEC price increases, most of DFSC's contracts include an escalator provision. This is sometimes referred to as "indexation." Sellers usually prefer not to quote a firm fixed price because of the risks associated with the possibility of inflation. If forced to make such a quotation, particularly in periods of increasing inflation and costs, sellers will include in their price, contingencies for increases in the cost of labor and materials. These contingencies may not materialize. Hence, to avoid paying for something not received, the buyer uses an escalation clause. [4:117] Escalation in petroleum contracts is limited to fluctuations in crude costs or other bonafide feedstocks.

An escalation clause provides for either upward or downward changes in price due to shifts in crude costs. DFSC previously used a deceleration clause. This limited the amount of upward adjustment that could occur without renegotiating the contract. This has been eliminated. In a Fixed Price with Escalation contract for other goods and services, upward escalation is usually limited to ten percent. [4:117]

Comparatively, the cost of Arabian light crude rose from $18 a barrel to &30 a barrel from September 1979 to September 1980. This is a 67 percent increase. [34]

Finding a meaningful index to which escalation may be tied is a real problem. Escalation is automatic once the contract and index are agreed upon. Therefore, the contracting officer's team and the oil company marketeers should negotiate this aspect carefully.

All economic price adjustments (escalation) in DFSC petroleum contracts are based upon changes in a negotiable reference price. This is established in the escalation clause of the contract. A base reference price consists of a four month weighted average acquisition cost of crude. Escalation is then based upon the difference between the base reference price and the reference price as reported month to month by the contractor to the contracting officer. In an attempt to be fair and reasonable to all petroleum suppliers, the DFSC uses several reference prices in their contract awards. [31:1] Examples are company postings, postings in Platt's Oilgram, and the cost of crude. [84]

The DFSC was criticized by the General Accounting Office (GAO) in 1975 for this procedure: [75:12]

> Price adjustment clauses based on an individual company posting of a refined product do not represent an industrywide contingency but merely a price at which one company is offering to sell its product. The danger in using this arrangement is the possibility of a contractor increasing its posted price even though there may not have been a general market change. A Center official said the Center tried but was unsuccessful in getting the clauses in the 24 contracts tied to the acquisition cost of crude oil.

> The use of acquisition cost of crude oil also has its pitfalls. There are some companies that have their own sources of crude oil. Thus, the transfer prices for these crude oils are not necessarily the same as those which would be arrived at through independent sales transactions.

The Center felt this criticism was due to a misunderstanding. As a DFSC contracting officer pointed out, this information is audited. DCAA audits each contractor a minimum of once every three years.

Pitfalls in this system still remain. Bradshaw and Herrick [31] examined five possible postings in their thesis. They looked at (1) Saudi Arabian crude oil, (2) Kuwait crude oil, (3) Nigerian crude oil, (4) Caltex JP-4, calculated from naptha and kerosene postings, and (5) Shell Eastern JP-4, calculated from naptha and kerosene postings. They concluded that no one price adequately met the requirements for a "single best" reference price. They went on to say: [31:109-110]

> Hence, if the DFSC is to be "fair and reasonable" to all contractors, the combination should ideally be all crude oil postings or all refined product postings. Since the purpose of a fixed price contract with escalation is to provide protection against changes ("significant economic fluctuations") in the contractor's cost schedule that lie beyond his control, a combination of crude oil and not refined product postings is preferable.

I. MULTIYEAR CONTRACTS

A multiyear contract is an agreement for a base year with requirements extending for up to a maximum of four additional years. A multiyear petroleum contract means the

terms and conditions remain the same for succeeding years. Only the price and quantity are renegotiated. [87] The advantage of this is that the contractor does not have to review every clause again to determine his compliance. He already knows. This is not insignificant considering the many pages of "boilerplate."

Another advantage of multiyear contracting is that it enables a company to plan its supply picture in the long term. This is subject to the availability of crude oil. But what is the long term? To some contractors it means three to six years in the future. To others it means anything beyond six months.

Contractors who plan beyond one year can benefit from this customer stability. Supplier stability is invaluable to DOD in terms of readiness. A precedent for the success of multiyear contracting was the Caltex Evergreen contract for bulk fuel during the Vietnam war. The relationship was established and the mechanics of supply were reliable. Of course Caltex had the necessary fuel and wanted to sell it. This may not hold true under present market conditions. [88]

There is no guarantee that there is a cost savings from the multiyear procedure. Some contractors interviewed see no benefit to the arrangement. It means they are still required to negotiate price, quantity, and submit supporting documentation. Furthermore, the Government can still cancel the contract for convenience.

Contractors who do not plan beyond six months have no incentive for a multiyear obligation. Crude supplies may not be known beyond this period for instance. Thus, flexibility is needed.

Most contractors agree that multiyear contracts have potential. A modification in the mechanics was suggested to improve it. The desired arrangement is that the terms and conditions remain the same. Additionally, the initial price base line (reference point) should remain intact and the economic price adjustment clause should stand alone. Thus, a new base line is not renegotiated and documented each year. The quantity would be the only issue in question.

DOD is concerned with the competitive process and not eliminating smaller companies from the process. Also, the continued use of a price escalation clause is subject to the same deficiency as in a single year contract. The contracting officer loses some control over the contract price. This is counterbalanced, somewhat, by the termination clause.

Multiyear agreements lessen the DOD administrative load. Reduced solicitation packages are sent to signatories. Negotiations are simplified. And a portion of supply needs is assured. More significantly, DOD moves toward being a regular customer.

J. REFINING CAPACITY

The future of the domestic refining industry is uncertain. The GAO conducted a study in 1979, "The United States Refining Policy In a Changing World Oil Environment." [77:i] It concluded:

> Growing U.S. demand for refined products, considered in light of already idle excess refining capacity in the rest of the free world, uncertain supplies of crude oil, a rapidly diminishing sweet crude resource base, and downstream expansion plans of oil-producing nations raises serious questions about the future of the U.S. domestic refining industry.

Oil companies indicated a growing amount of excess capacity. This was the reason one company sought the Government JP-4 business. The extra business kept their refinery near full capacity.

Foreign refiners have the largest excess capacity. Almost one-third of the Caribbean and European refining capacity much of it owned by U.S. companies, lies idle. Therefore, reliance on products refined in those centers may be construed as an alternative to large capital outlays to add domestic capacity. [77:i]

Limitations on both domestic and foreign reserves of sweet crudes mean refiners are increasingly being forced to process sour crudes. Processing sour crudes incurs investment and operating costs of up to $2 per barrel more than with sweet crudes. [77:9]

Termination of domestic crude oil price controls is predicted by GAO to have a significant impact. It will eliminate most of the protection from foreign competition

now enjoyed by U.S. refiners. In particular, it will affect (1) small refineries and (2) competition at the refinery level in the domestic market. [77-iv]

A different aspect of refining capacity is the allocation of products. Since JP-4 and unleaded gasoline are direct competitors, a refinery must give priority to one of them when it is at near capacity. The stockholder viewpoint is to refine the unleaded gasoline because of the higher profit margins.

A December 1979 meeting was conducted by the Secretary of Defense for the representatives of 12 oil companies. General Seamon testified that the representative of the oil companies were told: [72:7]

> Dependent upon their refinery capacity, both here and overseas for the international companies, the Department of Defense should be considered first, and get x percentage of their production capacity up front. That was may proposal to them.

While it is impossible to assess the full impact of that proposal, it appears that suppliers may have decided it is more advantageous to cooperate with the DOD on a voluntary basis. [72:7]

K. NAVAL PETROLEUM RESERVES

The Naval Petroleum Reserves (NPR) were established between 1912 and 1924. The original purpose of the petroleum reserves was that oil should be conserved in the ground until actually needed for national defense purposes.

The hysteria which followed OPEC I led to abandonment of the conservation philosophy. The Naval Petroleum Reserves Production Act of 1976 authorized production of the reserves for a six year period. Sale of the produced oil is to the highest bidder. The 1976 legislation was a response to the belief that these special reserves should now be produced fully and used to meet the total needs of the Nation. This meant they would no longer be reserved exclusively for the Armed Services. Another factor cited in support of that production was an effort to reduce the U.S. balance of payments deficit. This deficit resulted from the purchase of petroleum products from abroad. [72:12]

The sale of NPR production in January 1980 caused several problems. A bid for 10,000 barrels at slightly more than $41 per barrel established Elk Hills crude as the highest priced domestic oil. That price produced a ripple effect in the domestic market which caused prices of decontrolled domestic crude to move to the same level. The increased price also had international repercussions. Mexico raised the price of its oil, Canada raised its natural gas price, and Saudi Arabia protested. The U.S. had been encouraging Saudi Arabia to hold down the price of its crude to $26 a barrel while our Government was selling its oil at a much higher price. [72:14]

The Investigations Subcommittee of the House Armed Services Committee concluded that sale of the NPR production

should be discontinued. It should be preserved, either in the ground or in strategic storage. [72:14] Presently, the crude is still being sold on the open market.

L. STORAGE FACILITIES

Recent procurement shortages and the decision to draw down DOD's war reserve stocks to permit routine peacetime operations contributed to the 1979 deficits. However, those stocks generally were far below the war reserve requirements even before 1979. The principal reason for those deficiencies has been the lack of adequate storage facilities at most U.S. military bases. [72:10]

Budgeting problems have caused this lack of adequate storage. When Services have requested funds for these projects, they were typically reduced by significant amounts. Consequently, these projects are no longer listed as a high priority item. [72:10-11] Hence, the problem is perpetuated.

M. DISTRIBUTION

A bulk petroleum contract is essentially an indefinite quantity agreement. The contract provides the authority. The customer then orders the product when he needs it.

The minimum quantity clause of the contract obligates the Government to accept at least 25 percent of the contracted dollar amount. This is a recent change. The previous minimum lift requirement was $100 worth of fuel. Contractors still do not like this, but it is a significant improvement. [86]

1. Uncertainty

This is a difficult area for DFSC to manage. Requirements and contracts are predicated upon known requirements. However, there are many unknowns in providing for the national defense. For example, base closures alter petroleum needs. This political hot potato could take any number of directions. Contractors position products and schedule refining based upon the DFSC distribution plan (DP) and the distribution plan authorization (DPA). [85] When the requirement disappears, it can cause contractors extra planning and, in some cases, money.

Another unknown is unit deployments. Hostilities and potential trouble spots can relocate the forces requiring fuel. The challenge is to rearrange distribution plans to maintain readiness. This type scenario causes contractors the same type of planning disruption.

These two examples are why the Government requires the unilateral right to terminate a contract for convenience. Providing for national defense is in everyone's best interest. Furthermore, it is not reasonable to expect the taxpayer to pay for services not received.

2. Number of Delivery Points

Contractor management of DOD distribution is significantly different from commercial counterparts. According to industry officials, commercial customers normally require fewer shipments of larger quantities than the DOD. DFSC contracts require more contractor management due to the numerous small shipments.

There are various channels of distribution for petroleum products from the refiner from the customer: [5:141]

> Residual fuel oil, for example, may go to large industrial and utility customers directly from the refiner or through a few terminal operators and large dealers equipped to handle the product. Petrochemical feedstocks and commercial jet fuel are generally sold through contracts between the refiners and their customers.

The decision by a refiner as to whether he will utilize the jobber channel is a matter of economics. It is the usual choice to distribute through local jobbers where the station density and the average throughput volumes are low. [11:433]

One strategy used by industry is to bid FOB origin on all offers. This eliminates the hassle of complying with the minutiae in the contract. Then, if DFSC wants delivery, it contacts the commercial distribution side of the company.

The DFSC has decentralized distribution responsibility to the Defense Fuel Supply Regions. This has helped the management, but DOD is a large organization. [81]

3. Quality/Timeliness

DOD must manage the contract following award. Two problems which develop periodically are fuel which is not in accordance with the specification and late deliveries. To combat the first problem, fuel is inspected at the refinery prior to acceptance. Product not meeting the quality requirement is refused. Occasionally the contractor will

ask for a waiver. If approved, DFSC is compensated with a price discount or rebate due to lesser quality. [81] Late deliveries are handled through distribution management channels and are also at reduced prices.

N. DEFENSE PRODUCTION ACT

The invocation of the Defense Production Act during the OPEC I embargo demonstrated the inadequacy of the procedure. The problem with the Act is that it took several months to implement it. There are no known major changes contemplated at this time. DOD may preposition some administrative items to enable quicker implementation. [87]

Contractors don't like mandatory compliance. They commented that it is better to support the DOD under friendly conditions.

O. PETROLEUM - A UNIQUE COMMODITY

There is logical evidence which supports the claim that petroleum is unique--refer to Chapter III. But a basic question remains unanswered, "Is petroleum so unique that it requires different procedures?" Obviously, industry wants the DFSC procedures to more closely resemble commercial practices.

There are arguments which support keeping petroleum procurement under the DAR. The Defense Logistics Agency (DLA) is in the commodity business. It buys foods, grains and

feeds, fibers and textiles, wood, coal, and petroleum for instance. Contractors in each area claim that their product is unique and needs to be handled differently. [83]

Only two items which DOD contracts for are not covered by the DAR. Transportation services are exempted [DAR:1-102] and automatic data processing equipment (ADPE) is centrally procured by the General Services Administration (GSA). Transportation services have been highly regulated, although this area is presently being deregulated. Consequently, no goods or services that the DOD buys are exempt from the DAR or a reasonable equivalent.

The approach taken by DLA has been to obtain deviations to the DAR where they are appropriate. Deviations which affect only one contract can be granted by the head of certain major agencies. [DAR:1-109.2] Blanket deviations (affecting two or more contracts) must be approved by the DAR Council. [DAR:1-109.3] These deviations then become a written part of the DAR. This approach is applied to all the commodities, but petroleum in particular. [83]

P. SUMMARY

Shortfalls in the procurement of bulk petroleum as a result of OPEC I and OPEC II have caused concern among legislators. This has generated studies by DFSC, a contract review task force within DOD, and hearings by the Investigations Subcommittee of the House Armed Services Committee. The conclusion reached was the need to reassess the methods of acquiring petroleum fuels.

Issues raised by the petroleum industry are many and varied. Suggested areas for improvement are Government response time, the size and complexity of contract documents, slow payments, lift requirements, socio-economic clauses, the Defense Acquisition Regulation (DAR), general differences between Government and commercial contracts, Cost Accounting Standards (CAS), cost and pricing data requirements, price escalation, contract periods, and the Defense Production Act.

DOD has already taken numerous actions to more closely resemble commercial practices. Approximately two-thirds of the clauses from contracts used in the foreign market, and about one-half of the clauses from its domestic contracts have been eliminated. Contractors acknowledge this is a step in the right direction. However, they say much more is needed. Other issues which affect the process are distribution, storage facilities, refining capacity, profit margins on JP-4, and the use of the Naval Petroleum Reserve.

The first step in problem solving is to identify the problem. That is the purpose of this chapter. From this, alternatives can be identified and evaluated.

VI. ALTERNATIVES TO THE ISSUES

This chapter proposes possible alternatives to the issues already addressed. Alternatives which are plausible, but not politically feasible are also examined. The format is to develop the possible alternative. This is followed by an analysis of the alternative's merits and disadvantages. Finally, an assessment of possible future implementation is offered. These alternatives are not rank ordered by importance and are not all inclusive.

Alternatives are viable only if they can improve the acquisition process. Improvements may be in the form of dollar savings, time reductions, reduced administrative requirements, or elimination of procurement shortfalls.

A. ALTERNATIVES TO JP-4

Substitute fuels for JP-4 are available. JP-5 and JP-8 are candidates to perform the same function as JP-4. This could offer significant flexibility to DOD if these alternatives are viable.

JP-4 is a naptha base jet fuel. It is used primarily by the U.S. Air Force, although not exclusively. It is considered to be a low quality jet fuel and is hazardous due to its flash point of below room temperature. Yet it represents over 50 percent of the DOD total fuel volume. In the Western Region of the U.S., JP-4 accounted for 63 percent of the fiscal year 1979 total volume. [81]

An alternative currently in use is JP-5. This is a kerosene base jet fuel and is roughly equivalent to the commercial jet fuel known as Jet A-1, JP-5 is used primarily by the U.S. Navy. It is safer for on-board carrier operations due to its higher flash point of 60 degrees Centigrade. [MIL-T-5624K] It is also a better quality jet fuel than JP-4 and correspondingly more expensive. [81]

A second alternative being suggested is JP-8. This is a potential universal military jet fuel because it can fulfill the needs of all the Services. [81] JP-8 is also a kerosene base jet fuel.

Kerosene base jet fuels appear to offer significant advantages over JP-4. They are better quality fuels. Safety in handling is also increased. Furthermore, they are generally similar to commercial aviation products.

There are significant disadvantages of kerosene jet fuels, such as JP-5 and JP-8, which cannot be ignored. First, they are more expensive than JP-4. It is possible that conversion to a universal jet fuel would offset increased per unit costs through storage savings. However, the production capacity from a barrel of crude oil makes this impractical. Kerosene base jet fuels (Jet A-1, JP-5, and JP-8) are drawn from less than 15 percent of a barrel of crude. Comparatively, JP-4 can be drawn from up to 40 percent of a barrel of crude oil. [33:4] Therefore, much greater volumes of JP-4 are possible from a quantity of crude oil.

Industry officials advise that refineries cannot support a universal military jet fuel. Industry capacity is insufficient to refine all Jet A-1 or all JP-5, or all JP-8.

B. INCREASE FUEL INVENTORIES

Increasing fuel inventories can improve DOD's negotiating position with the petroleum industry. According to Commander Marshall Sneiderman of the Naval Postgraduate School, petroleum supply can be thought of as one continuous pipeline. Crude oil goes in one end and products come out the other end to the consumer. Refiners, distributors, and DFSC are in that pipeline. Generally, crude oil goes in the pipeline at a steady rate and products are consumed at a relatively constant rate. Large manipulative inventory stocks are not available to the industry suppliers. The more fuel DFSC has in its inventory, the more flexibility it has in purchasing.

Larger inventories enable more variance in the timing of a purchase. This can result in dollar savings in the short run. Especially when prices are spiraling upward in a short period, this savings can be significant. An example of this type of situation is OPEC II. Over the long run, however, this advantage is diminished. When prices continually increase, the DOD must eventually buy regardless of price.

There are two ways the DOD can increase its fuel inventories. Inventories are viewed in terms of the number of days of supply. Perhaps the more obvious method of increasing inventories is to add additional tankage and fill it.

Funding for construction of new petroleum storage facilities requires Congressional approval. New construction must be authorized and then funded under the Military Construction appropriation. It cannot come from operating funds. The prospect of new storage is a costly alternative as indicated by a House Subcommittee: [72:11]

> Again, cost becomes a factor in deciding whether to build hardened storage facilities. While the open tanks are the cheapest form of construction, their vulnerability appears to make further use of them unwise. Accordingly, all new construction of storage facilities, worldwide should be conducted with an eye toward the vulnerability of the facilities in a wartime environment.

It is not clear whether additional storage is cost effective. However, it does improve defense readiness during supply disruptions.

The second means of enlarging the number of days of supply is through conservation. Reduced consumption by DOD enables more use from a fixed inventory level. Conservation was a contributing factor to enable DOD to increase its fuel inventories in early 1980. [72:7]

The international petroleum market has not demonstrated the effectiveness of increased inventories. In Business Week, it was noted that spot prices are on the rise again and have passed the $40 a barrel mark. "Spot prices are climbing because consumers are afraid to use their reserves. You can't use stocks if you don't think you can get them replenished. The Western governments are finding the weapon they've built can't be used." [25:51] This situation is representative of the long range dilemma of the buyer.

There are tradeoffs to larger fuel inventories which must be considered. First, the storage life of the fuel must be considered. Fuel is subject to deterioration. Consequently, there is an upper limit on how much fuel can reasonably be stored. Second, and perhaps more importantly, is the increased carrying costs. Carrying costs increase proportionally with the size of the inventory. Just as there is an optimum point in the Economic Order Quantity (EOQ) model, so is there in the option of increased inventories. At some point, the cost savings from selective purchasing will be exceeded by larger carrying costs.

An increase of fuel inventories has Congressional favor. In the Investigations Subcommittee report, the need for additional fuel storage was emphasized. [72:11]

C. USE OF THE NAVAL PETROLEUM RESERVE (NPR)

1. Preservation of the NPR Crude Oil

The Investigations Subcommittee of the House Armed Services Committee recommended preservation of the NPR crude oil, either in the ground or in strategic storage--see Chapter V. This is justified on the grounds that "it will probably be several years before the Strategic Petroleum Reserve (SPR) ever contains enough oil to sustain the Nation for more than a few days." [72:14] The NPR is viewed as the only reliable source of emergency national defense oil.

Retention of the NPR crude by either means achieves the objective of future availability. But it seems clear

that storage in the SPR is superior to leaving the oil in the ground. The critical difference between natural crude oil deposits such as the NPR and crude oil held in storage facilities like the SPR is the rate of extraction. Oil in storage facilities can be pumped out much faster than oil in natural formations. [71:2] This is an enormous advantage for the SPR during hostilities. It should be noted that the SPR reservoirs are presently being filled at the rate of about 100,000 barrels a day. The Senate voted overwhelmingly to sharply accelerate filling of the SPR to 300,000 barrels a day. However, the legislation isn't likely to make it through the House this year according to the Wall Street Journal. [45]

The SPR consists of not only crude oil but also refined petroleum products which are placed in storage facilities for rapid removal. These facilities may be above-ground steel tanks, underground cavities created in salt domes, or mined caverns in suitable rock formations. These installations are fitted with pumps, pipelines, and tanker loading facilities to enable filling, extraction, and transport to refineries or distribution points. The fuel is then delivered where it is needed. [71:1]

2. Refine the NPR Crude for DOD Use

Another alternative is to convert the NPR crude to refined products. Then it can be put into strategic storage.

The merits of this approach are supported by Gramm and Maurice. [17:71-73] Their hypothesis is that crude oil stockpiling is a prime example of poor economics. They examined the practice of long-term crude stockpiling in the NPR. Considering only pertinent economic factors (interest rates, royalties, inflation, and others), the authors concluded that their calculations prove that it is a bad investment to stockpile crude. "In fact, not only have the reserves proven to be a poor economic investment, but the U.S. public is likely losing money for every day the NPR's are not produced." [17:71]

The Investigations Subcommittee counters the economic argument with other considerations. The following comments are from its report: [72:12-13]

> Certainly, sales of NPR production have been beneficial to the Treasury, and have permitted some reduction in our balance of payments deficit. On the other hand, they have also had a deterimental impact on the readiness of our Armed Forces. . . .If the day should come when we are involved in a conflict and our Armed Forces lack the petroleum needed to pursue that conflict, the dollars realized from those sales won't be able to propel the aircraft, ships, tanks, and armored personnel carriers which must prosecute such a war. This subcommittee believes that as a Nation we have no other acceptable course but to return to conservation of these reserves.

Other factors support a return to conservation as well--see the above section on increasing fuel inventories. Refined products have limited storage life due to deterioration. Additionally, refined fuels require storage tanks which may cost more money.

D. DOD ENTRY INTO THE CRUDE MARKET

The DOD has the option to obtain crude oil and have it refined. This crude oil could come from the NPR or the market place. The key motivation of this alternative is the Government ownership of the NPR. Another contributing factor is that excess refining capacity is on the rise--see Chapter V.

There are important considerations which weigh against this alternative. Currently, the NPR crude is still being sold on the open market. [87] Consequently, DOD has no crude oil source it can use for this purpose. If DOD wants to pursue this option under existing conditions, it must purchase oil at a comparable price to the oil companies. There is a limitation here. As one DOD official pointed out, when products are tight, so are crude supplies.

A further consideration is who will refine the crude oil once obtained. Interviews with spokesmen from the larger oil companies indicated they are not interested in the business. They already have enough crude supplies and customers to keep their refineries near full capacity. It was suggested that small refiners would probably be interested. Assuming that DOD can find interested refiners, there still remains another obstacle.

A contractual arrangement for refining crude oil and returning fuel in kind could be very complex. It must be remembered that each barrel of crude oil yields a variety

of products. DOD is not interested in purchasing all of these derivatives. Also, the proportions in which they are produced rarely meets the needs of the customer. Consequently, the contract would have to be for a percentage of JP-4, for example. Costs would be for the refining itself and the refiner's trouble for disposing of the other products in accordance with the balanced barrel concept. More risk is assumed by DOD, too, since it would own the crude oil refined. Under the present system, fuel which is "off-specification" can simply be refused and the refiner must correct it.

There is a lack of consensus within the Government concerning the NPR crude oil and the refining issue. A DOD official commented that DOE wants the oil to go into the SPR. Alternatively, DOD desires that it be refined for its use.

E. DOD NEGOTIATION STRATEGY

The DFSC must appraise its own strengths and weaknesses accurately as the Government representative in relation to the petroleum industry's strengths and weaknesses. Only as a result of an accurate appraisal of relative bargaining strength can the DFSC contracting officers skillfully demand the right things at the right time and make timely concessions. [4:149]

1. Government as a Buyer

Government contracting is not synonymous with contracting in the petroleum industry. Chapter V addresses the differences between the two contracting worlds. It is

evident that the Government is not a commercial buyer in the commercial marketplace. Rather, it is the Government as a buyer in the commercial marketplace. [87] Ideally, the DAR should approximate industry practice as much as possible. Yet, it will continue to be different due to the public funds involved.

Complaints about Government contracting are not unique to the petroleum industry. [78:87] Where industry practices are unusual, the DAR must be made to accomodate these procedures when permitted by legislation.

2. Industry Pricing Practices

The petroleum refining and distribution industries are oligopolies. As such, they face a kinked demand curve in the short run. This enables price competition by DFSC. Vertical integration lessens the effectiveness of buyer efforts to increase competition, but it does not eliminate it. In fact, industry concentration ratios are decreasing which is in the Government's favor.

An understanding of the theory of variable-margin pricing is essential if buyers are to obtain the right price. Variable-margin is another name for balanced-barrel pricing. In somecases, using average profit margins results in prices that are too high. Invariably when average margins are used, prices considerably above fair prices result for large long-term purchases such as annual contracts. [4:94]

3. Use of the Spot Market

Purchases of fuel on the spot market is a means of promoting price competition. Currently, the spot market can only be used to cover procurement shortfalls. [84] To maintain leverage within the domestic markets, the spot market could be used for a percentage of purchases when spot market prices are advantageous to DFSC. Admittedly, this cuts right across the current solicitation, negotiation, and award procedure. But it is an accepted commercial practice and would enable DFSC to promote price competition. [33:5]

4. Seller's Market

The petroleum products market is a seller's market and will remain so in the forseeable future. This gives oil companies a lot of power. Even though the DOD is the industry's largest customer, this is offset due to the award breakout among companies.

5. Patriotism

The Government must appeal to the national interests of the companies. This sounds like an out-of-date cliche, but almost everyone interviewed indicated this was a factor in supporting the Government. Industry representatives acknowledge that their responsibility is to the stockholders, but not to the exclusion of the Nation's welfare.

F. MULTIYEAR CONTRACTING

Advantages of multiyear contracting--refer to Chapter V--make it an attractive alternative. It would further competition. In order for this to have greater impact, the price

renegotiation aspect needs to be modified. Cost savings could be recouped by the Government.

A method for its use is to contract a percentage of requirements via the multiyear vehicle. Contracts could be from two to five years in duration. The balance would be contracted on an annual or spot purchase basis. This still provides smaller companies an opportunity to receive Government contract dollars. [33:2]

The future for multiyear looks bright. Recent solicitations from DFSC offered this to contractors as a bid option. [86] A few companies indicated a preference to bid in this manner.

G. BLANKET MARKET PRICE EXEMPTIONS

A blanket exemption from submission of cost or pricing data and CAS is possible. All petroleum contractors have been able to justify the market price exemption. Petroleum products will continue to be sold in substantial quantities to the general public.

Removal of these requirements would reduce the contract size. The contract could substitute a clause requiring mandatory submission of data supporting the market price. The Government can still protect itself through audit of the data.

The major obstacle to this alternative is the law. Both requirements were generated by legislation. It is doubtful that Congress will change the law for one industry. This is a requirement that is here to stay.

H. CONTRACT QUANTITY VARIANCE

Instead of stating requirements in terms of a minimum lift quantity, the contracted amount could allow a variance. A variance allows a high/low range in which the orders can fluctuate. [85]

A contract quantity with a plus or minus variance allows latitude in both directions. It is a bilateral approach which allows both parties a hedge. This may result in a higher minimum quantity for the Government.

If circumstances prevent the Government from ordering the minimum tender, the contract can still be terminated for convenience. Therefore, DOD still has recourse for exigencies. It also offers DOD the opportunity for more fuel without additional negotiation.

I. OPEN SOLICITATIONS

Open solicitations have been used by DFSC during periods of procurement shortages. An open solicitation means there is not a closing date for submission of proposals. It is not presently in use, but it is a tool with potential. Its intent was to ease the deadline for submitting proposals. Offers may extend into the contract performance period. [86]

An advantage of this technique is that contractors with uncertain crude supplies may bid at a later date. Flexibility for the contractors is increased. Firms can submit a proposal anytime they want to sell fuel. This could be due to firms' desires to rotate fuel stocks or by the presence of additional fuel due to schedule changes.

Open solicitatins are not without their problems. Without a closing date, DFSC may not know if their requirements are going to be fulfilled until well into the contract period. It is also difficult to compare offers. The method previously used to evaluate proposals was to accept offers negotiated within the competitive range. [86]

An alternative method is to set a price ceiling and allow the contracting officer to accept offers negotiated within that ceiling. Offers outside the ceiling would be elevated to the head of the procuring agency for action.

J. UNSOLICITED PROPOSALS

Unsolicited proposals offer contractors the added flexibility to seek Government business. This has a similar effect as a proposal received uner an open solicitation.

An unsolicited proposal can be submitted without being in strict compliance with Government requirements. This does not mean the contractor is in noncompliance, but that follow-up paperwork can be accepted by the contracting officer within a specified time period. The major advantage of this is the additional time in which to generate the supporting documentation.

This has a chance for a greater usage in the future. The DFSC has received some unsolicited proposals from contractors. [86] This alternative is used, but the use does not appear to be widespread.

K. CENTRALIZED PURCHASING vs. DECENTRALIZED PURCHASING

Centralization of the purchasing function is a suggested means of attaining both optimum operating efficiency and maximum benefit. This is the concept presently in use within DOD. The alternative is to extend it even further.

Centralization offers many benefits. Duplication of effort can be reduced. Quantity discounts are also possible due to larger solicitations. Centralization provides an opportunity for specialization among purchasing agents. [4:398]

The Commission on Government Procurement recognized the potential of centralization. In its final report, it recommended the adoption of "cross-servicing." [76:iii] Cross-servicing is the interagency use of field personnel at contractor locations to perform such activities as preaward surveys, price analysis, and quality assurance. Cross-servicing is uncommon in the Federal Government because it is voluntary. There is no one in the executive branch who controls it. [76:22]

Cross-servicing has encountered resistance within the Government. The GAO points out that there is no tradition for this in civilian agencies. Coupled with this is a general lack of knowledge about the concept. [76:24] Thus, it is not surprising that this is resisted. Agencies tend to be empire builders and do not like to surrender authority.

Typical benefits of cross-servicing could disappear if purchasing authority for other agencies is consolidated under DFSC. It seems reasonable that large volumes could be added with success. The tradeoff becomes a span of control which is unwieldy. The farther removed a customer is from the procurement source, the harder it becomes to correct problems. DFSC already purchases for the National Aeronautics and Space Administration (NASA). It could perform this same function for other agencies.

Decentralization means to move the procurement function closer to the user. Advantages are quicker response time, closer proximity to the supplier, and better control by user organizations. Despite these advantages, movement in this direction appears to have little to offer DOD. Decentralization would require contractors to respond to even more solicitations and contract documents. This would seem to be counterproductive, realizing that contractors complain about this volume already. Plus, decentralization requires even more highly trained contracting officers that understand petroleum contracting. Advantages of centralization become disadvantages of decentralization.

L. EXEMPT PETROLEUM PROCUREMENT FROM THE DAR

The use of a DOD panel to oversee petroleum procurement is an alternative to the DAR. Several circumstances support a more specialized management of the procurement. Fuel purchases are becoming a dominant portion of the DLA budget.

An unofficial estimate of the 1980 percentage is upwards of two-thirds of the total. A continuation of this upward trend is expected to continue.

The DAR already has numerous exemptions for petroleum included in it. At some point, it becomes more practical to separate coverage of an item than to exempt it clause by clause.

Even though this suggestion has some appeal, it is not practical. Despite many exemptions, the majority of the DAR applies to petroleum procurement. Legislative mandates limit the amount of change which can be made in the process.

M. SUMMARY

There are many ways to deal with the problems and issues which have been identified in connection with petroleum procurement. Some are politically feasible and others are not.

Requirements derived from legislative mandate are probably going to remain intact. The Legislature has deemed these procedures to be in the public's best interest. The DAR represents an amalgamation of laws and administrative directives. Despite problems, it works. Socio-economic clauses represent good intentions and are politically desirable. Submission of data to justify exemption from cost or pricing data and CAS is by public law and continues on a case-by-case basis.

Substitute fuels for JP-4 are available. They are JP-5 and JP-8. However, industry does not have the capacity to produce them in necessary volumes for complete substitution.

Many options offer realistic alternatives to improve the procurement position of DOD. Increasing fuel inventories enables short-term flexibility in buying low cost fuel. Ongoing conservation and the addition of storage facilities contribute to this strength.

The NPR is a multipurpose source of crude oil. Sale of the crude should be ceased and the oil diverted to DOD. This can be sent to the SPR or converted to refined products. A similar plan is for DOD to purchase crude oil on the spot market and contract fit it to be refined.

DOD must continue to assess its strengths and exploit these. DOD is the largest customer in the market. Through price competition, it can improve its position. This can be achieved through analysis of variable-margin pricing and purchases on the spot market. Patriotism should not be overlooked since a free America permits the free enterprise system.

Multiyear contracting should be given another look. It could be modified to renegotiate quantities only. Open solicitations offer a technique for periods of fuel shortage or crude supply uncertainty. Unsolicited proposals are a worthwhile means for contractors to sell fuel without time constraints on data submission.

The DFSC is a centralized procurement organization. It performs cross-servicing and may have the potential to do more.

VII. CONCLUSIONS/RECOMMENDATIONS

There are many issues confronting the procurement of bulk petroleum, but they are not insurmountable. After a review of historical developments and the resultant contracting procedure, it appears that several significant points emerge.

Conclusions are presented first, followed by recommendations. The main thoughts are rendered, along with references to supporting arguments and documentation.

A. CONCLUSIONS

1. The Government's bulk petroleum contracting procedure is moving toward the industry practice, but will never reach it. The legislative and administrative constraints permeating the process are put forward in Chapter II. Additionally, historical precedents from Chapter IV highlight how many present requirements came into existence.

There are many issues which separate DOD from the industry. These are detailed in Chapter V. Perhaps the most significant disparity is the socio-economic goals imposed upon the DOD acquisition process. Next would be the safeguards to protect the taxpayers' money.

2. DOD faces a seller's market for procurement of petroleum fuels and all the problems inherent therein. Despite the fact that the market turns soft periodically, it will

remain a sellers' market for a while. The industry is making sufficient profits to remain healthy, as was pointed out in Chapter V. The driving factor has been the OPEC embargoes and declining U.S. production. More detail is offered in Chapter IV.

3. Inadequate planning and management of the Naval Petroleum Reserve (NPR) and the Strategic Petroleum Reserve (SPR) have compounded DOD's problems. Sale of the NPR crude has depleted the Reserve with undesirable side effects as noted in Chapter V. Also, U.S. interests can be further promoted by filling of the SPR.

4. There are no substitutes for mobility fuels and in particular JP-4. Fuel is a unique commodity. JP-4 dominates the discussion because, as shown in Chapters III through VI, there is no commercial equivalent. A lack of replacement fuels which can be produced in sufficient quantities illustrate the dilemma.

5. DOD has not taken maximum advantage of its market power as the petroleum industry's largest customer. The petroleum industry has perceived DOD as a spot market buyer in the past. Chapters IV and VI mention product allocation as a change to this procedure. Yet, available tools which could be used to increase price competition are not exploited. Examples proposed in the alternatives are increasing fuel inventories, purchases of crude oil on the spot market and increased use of multiyear contracts.

6. Changes in the petroleum contracting procedures are perceived as a step in the right direction, but of insufficient magnitude. Timeliness of contractual agreements, faster payments, the contract length and complexity, and the minimum lift quantity are a few of the issues raised. Much of the present contract reduction is due to elimination of duplicate requirements. [Chapter V]

B. RECOMMENDATIONS

1. Sale of crude oil from the NPR should be stopped. Production should continue with a portion being stored in the SPR as refined product and the remainder as crude oil. As noted in Chapter VI, this is in line with the opinion of the Investigations Subcommittee of the House Armed Services Committee. A disparity in disposition of the crude exists between DOE and DOD. The NPR is intended for defense purposes, therefore the author supports the view of having a portion refined for DOD use. The suggestion that the remainder go to the SPR as crude was noted in the alternatives discussion. This is due to the limited storage life of refined product.

2. Fuel inventories should be increased to the maximum extent possible, consistent with tradeoff analysis on increased carrying costs. As discussed in the alternatives, larger inventories enable short-term flexibility. This can result in dollar savings. Furthermore, it is consistent with the posture of a strong national defense. Limitations on the amount of increase are carrying costs and shelf life.

3. Multiyear contracting should be modified so that price escalation and the terms and conditions remain unchanged during the contract life. Only quantity should be renegotiated annually. This offers a significant reduction in procurement administrative lead time as noted in Chapters V and VI. Both contractors and the Government stand to benefit from the reduced workload. The contracting officer has less control, but he is not without safeguards. The success of multiyear contracting has a historical precedence.

4. A quantity variance in the contract should replace the minimum lift requirement. This allows DOD the option of a minimum amount plus the authorization for some additional fuel without renegotiation. The Government can always terminate a contract as a sovereign when necessary.

5. Petroleum procurement should be exempted from all nonlegislated requirements. DFSC should be as near the industry practice of conducting business as the law permits. Fuel is becoming such a large portion of the DOD operating budget that every effort should be made to streamline the procurement process. The discussion in Chapters III through VI support the notion that unnecessary work results in higher costs to the consumer. One suggested method for management is to form a DOD panel to oversee all aspects of the procurement process external to the DAR. Legislative requirements would remain intact.

6. Requirements that are granted exemptions from the DAR on a routine basis should be replaced with a clause that requires submission of the supporting data. It is a pure nuisance to continually hold Cost Accounting Standards and the submission of cost or pricing data over the petroleum industry's head when it has demonstrated a track record of justified exemptions. The discussion in Chapter V pointed out the additional volume this requires.

7. Price competition should be enhanced by DFSC. A percentage of purchases should be allowed via the spot market when prices are competitive. As noted in Chapter IV, the spot market is presently used to meet unfulfilled requirements. If this option is added up front, the contracting officer has a tool to apply leverage during negotiations. The percentage can remain small enough to not damage the procurement process.

8. Further use of unsolicited proposals should be made by contractors. The delayed timing is what makes this method attractive. It offers contractors the chance for additional business under the advantages mentioned in Chapter VI.

9. Further research should be conducted in the area of procurement practices by large private consumers of energy.

10. Further research should be conducted concerning the role of transportation and distribution in the marketing of fuel. Transportation limits the options of a contractor's bid. Also, transportation is a significant portion of the product cost. Furthermore, transportation is a large energy user itself.

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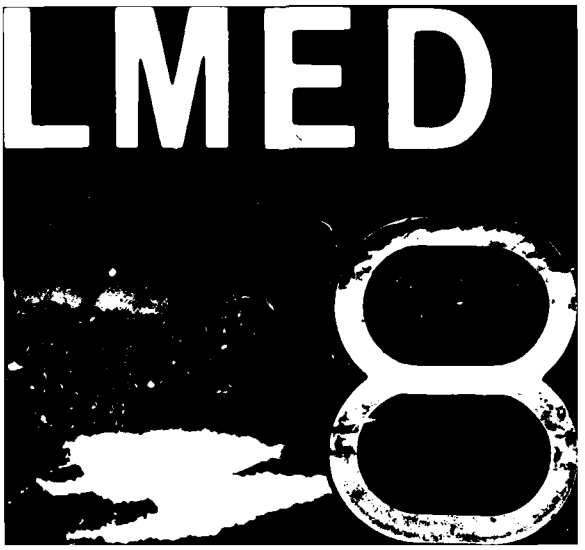
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